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EDUCATION

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By ARTHUR B. MAYS

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By KENNETH BEACH

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INDUSTRIAL ARTS NUMBER

ARTHUR B. MAYS,, *Editor*
Professor of Industrial Education
University of Illinois

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EDUCATION

Vol 63 APRIL, 1943 No. 8

Versatility *as an* Objective *of* Industrial Arts

By ARTHUR B. MAYS
University of Illinois

VERSATILITY comes from a Latin word meaning to turn round, and formerly meant in English the quality of being capable of turning round. From that concept it has derived its present meaning of being able readily to turn from one skill or activity to another. In the complex life of modern civilization versatility is a quality highly prized and its presence or absence in one's personal equipment may determine success or failure. It is increasingly a factor of success because of the rapid changes which occur in the techniques and character of nearly all modern occupations. The ability quickly to master the skills and technical facts of a new vocation is also becoming an important qualification of one who desires to avoid frequent unemployment. Hence versatility increasingly is regarded as an important objective of education and particularly of those fields of study which represent in the school curriculum the major groups of occupations.

The expression "industrial versatility" has occasionally appeared as an objective of instruction in industrial arts. Presumably, it means the ability to turn quickly and easily from one process to another and from one industrial occupation to another. It is assumed that varied experiences of the school shops will somehow produce this highly desirable quality. This assumption, when not critically examined, may lead to an unjustifiable multiplication of superficial shop experiences which produce mental attitudes and work habits which make occupational versatility practically impossible. It may also lead to the mistaking of dilettanteism and superficiality for versatility. Superficial knowledge of many things is not the basis of real versatility. Rather is versatility based upon a broad, fundamental understanding of those areas of knowledge and skill which are basic to a variety of occupations. This means a type of shop experience very different from that provided by a brief, amateurish contact with numerous kinds of material and skills. Whatever values there may be in a general-shop course which provides a superficial ex-

perience in each of six or eight different industrial fields during one semester, "industrial versatility" is not likely to be one of them. Real versa tility is not produced that way.

What has been said here regarding "industrial versatility" is true of versatility in general. The versatile man is usually not the one who has had brief, superficial experiences with many areas of knowledge, but is rather the man whose education has been broad and deep in those areas of knowledge which are basic to many fields of thought and action. Furthermore, he is one who has cultivated those habits of thinking and working which are necessary for success in every phase of human achievement. One who knows how to learn and wants to know is more versatile than one who knows a little about many things but lacks the ability and desire to learn more. The ability to learn more comes from training in habits of *mastery* of subject-matter. Desire to know, likewise, is based upon previous pleasure derived from knowing. That is to say, the person possessing the habit of thoroughly studying and mastering anything with which he must deal is far better able to turn to new problems and to master them than is one who lacks such a habit.

If versatility is to be made an outcome of industrial arts teaching it is not only necessary to know exactly what it involves and what kind of training and knowledge produce it, but very specific provision must be made to develop it. Merely to announce it as an aim will not cause the industrial-arts experience to result in its development. The teacher must plan both the content and methods of his offerings to produce versatility. After all, as Professor Selvidge often reminded us, courses of study can't have aims, only the teachers of courses have aims. What sort of industrial-arts course-content will contribute to the versatility of those experiencing it, and what instructional procedures will produce the ability to turn to new skills and areas of knowledge and master them quickly?

If it be true that versatility is fundamentally a matter of mental habits and motivation, then it follows that the courses which will contribute to its development must be designed to produce the habit of mastery and the desire to learn thoroughly facts and skills. It is also important that the area of industrial processes, materials, and skills dealt with must be basic to large sections of modern industry. Such areas are wood, metal, mechanical drawing, machines, power units, textiles, etc. From each such large sections of industry those groups of processes should be chosen which seem to be basic to the entire section. When these are determined they should be mastered by the pupil, together with the technical knowledge which gives real meaning to the entire area as a phase of modern industry. No one pupil should attempt to work in more such fundamental areas than he is capable of mastery and of continuing curiosity and desire to know. This capacity will vary with the individual. Some can master the fundamentals of four or five areas, others will be better served when limited to two or three at the most. Hence if versatility is a major objective the program of industrial arts experience must be sufficiently flexible to serve varying capacities for mastery and continuing desire to learn. This will mean a revolutionary change in some

of the present practices in industrial arts.

Furthermore, it is essential that the teaching procedures used shall be designed to develop the *habit of mastery*, both of skills and facts, and a persistent desire to understand any new tools, machines, processes, or materials with which one is confronted. This all means intelligent, skilful teaching by a well informed, enthusiastic teacher who possesses the qualities he is trying to develop in his pupils. Such a teacher will pour into his teaching vital and interesting technical information which will continually sharpen curiosity and the desire to know more. He will also insist on skilful performance, if need be, at the expense of quantity of output and range of processes taught.

The writer fully realizes that this concept runs directly counter to recent trends in industrial-arts instruction, but he believes that if versatility is to be an outcome, present trends are moving in the wrong direction. It is also questionable whether the scattering of pupil experiences over wide areas too numerous for any possibility of mastery of any processes or any basic facts, is good education. Whether versatility is a major objective or not, it is probable that the other commonly accepted objective of industrial arts will be better served by thorough work in a few basic experiences than by numerous experiences of a superficial character in many areas.

This is not an argument against the general shop *per se*. Rather it is a plea for a sound basis for the selection of general-shop experiences and the limiting of the areas represented in the general shop to a smaller number so that the degree of thoroughness requisite for real versatility can be developed. It all amounts to this: (1) a small number of industrial experiences which are basic to large areas of modern industry are more valuable than many experiences which are not basic; (2) thorough mastery of a few fundamental skills is more valuable than a superficial exercise of many skills; and, (3) the habit of mastery and the continuing urge to know is a better guaranty of occupational versatility than the habit of being satisfied with amateur performance and an indifferent attitude toward knowing.

Let Us Keep Our Sights Up

By KENNETH BEACH
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WHILE the majority of industrial arts programs meet the objectives generally recognized for this type of education, in many industrial arts shops there is a decided laxity in standards of workmanship that are permitted in pupils projects. Well-conducted programs provide opportunities for the developing of creative ability, individual planning, study of good design, proper practices of construction, selection of materials and finish in the making of projects. On the other hand, some programs still hold to rigid requirements as to projects made, and materials used, as well as permitting slipshod work on the grounds that skill and individual initiative are only secondary.

Great changes have marked the development of industrial-arts education in our public schools since the period of "manual training." During the days of manual training the major objective was workmanship and skills required in the use of hand tools. Pupils were often held to close tolerances on work done and were required to make numerous exercises, samples of various finishes, etc., that would develop their skill.

From manual training has gradually evolved industrial-arts education with a much broader concept of objectives. Skill in workmanship has become only one of several objectives to be obtained in a well-rounded program of industrial-arts education. The industrial-arts teacher today must concern himself with developing in the pupil an active interest in industrial life, avocational activities, creative expression, educational guidance, self-reliance and confidence, orderly methods of procedures, consumer education, good work habits, and cooperation. In addition, the teacher is expected to teach in several industrial fields such as woodworking, auto mechanics, printing, textiles, mechanical drawing, general metal work, ceramics, and electricity.

Need for Higher Standards

This lowering of standards in the workmanship and quality of projects produced is a serious handicap to industrial-arts education and a real detriment to the pupil. Educators, parents and the public in general are quick to make critical remarks about inferior projects made by the industrial-arts pupil. We should never overlook the fact that the pupil and his parents will have to live with the project that he completes and takes home, and that they must be satisfied with it. Boards of education are reluctant to approve funds for the establishment, development, or expansion of industrial-arts programs if they see poor workmanship displayed in industrial-arts projects.

The practice of permitting the pupil to do inferior work is in most cases entirely unjustified. Holding him to high standards of workmanship is nec-

essary to achieve the objectives of industrial-arts education. How can habits of self-discipline, careful and thoughtful work, the ability to perform elementary skills with tools and an appreciation of good workmanship be developed in the pupil unless high standards are required?

Although much has been written and said about industrial-arts education and trade or technical education, there still exists confusion among educators and laymen. Many persons still regard industrial arts as vocational training and, when they see inferior projects from the industrial arts class, they criticize vocational education. As a direct result of this condition, the writer has seen one outstanding incident which has been a real detriment to industrial education. A state supervisor of industrial education has been reluctant to approve or to encourage schools to establish industrial-arts programs because of the lack of understanding that might develop in thinking that the shop work was a part of the vocational education program.

Another reason why high standards of workmanship should be required is the pre-vocational aspect that industrial arts holds — particularly in the junior and senior years of the senior high school. Where pupils take industrial-arts through the entire junior and senior high school years, it is generally agreed that, if the training is properly given in the latter years, it closely approaches that of vocational education. In view of the above, it is necessary that good workmanship be required in the junior high school as well as the senior high school. Permitting poor workmanship in the earlier years on the grounds that the pupil is inexperienced, is certainly a practice to be questioned. Simpler projects should be built in the earlier years rather than permitting loose or low standards.

Causes of Low Standards

What are the reasons for this lowering of standards on industrial-arts projects? One already mentioned is the broadening of objectives and the emphasis being placed on them and the wide range of skills which the industrial-arts teacher is expected to have in several fields. Low certification requirements, set up in some states, which permit almost anyone from the school janitor to the Latin teacher to teach industrial arts, is certainly another definite reason.

The exploratory feature of industrial arts — particularly in the junior high school where all pupils are required to take the course, regardless of interest and ability—adhering to rigid project requirements are also conditions that tend to lead to inferior workmanship and poorly made projects. The failure on the part of the industrial-arts teacher to hold to high standards and the superficial manner in which he often grades or inspects the pupils' projects must also be considered.

The lack of awareness on the part of the pupil of what constitutes good workmanship and the desire, in many instances, to rush through a project also tend to lead toward poorly made projects.

Suggestions for Raising Standards

The responsibilities for the above conditions fall basically upon the shoulders of industrial-arts teacher-training institutions and state education departments responsible for setting up certification requirement. The development of the general shop has placed a requirement on the industrial-

arts teacher for skills in several fields. As a result, many prospective teachers in their training institutions do not receive sufficient training in any particular field. The training in several fields is spread so thin that standards of performance are considerably reduced. It would seem more desirable to limit the prospective teacher's training to two or three industrial fields where he could develop a high degree of skill rather than to give him a little training in six to ten fields. If the teacher finds that he needs training in other fields after he is employed, it is recommended that he take this training in summer schools. It is apparent that the teacher cannot expect good work from his pupils unless he, himself, can do good work.

States that have high certification requirements have superior programs; states with low certification requirements have inferior programs. The establishment of satisfactory certification requirements that will help secure qualified teachers is a state problem; however, industrial educators should be aware of their responsibility in seeing that proper requirements are established. The only people who can say with authority what constitutes satisfactory training requirements in any field are the experts in that field.

In addition to the above causes for the lowering of standards, there are several which the teacher, himself, can correct. In most cases a teacher gets only what he asks for from the pupil, and no more. In holding to high standards, it is necessary that individual differences be recognized. In courses that are primarily exploratory in nature and are required of all pupils, one must recognize the individual. It is just as important to find out what the pupil can't and doesn't want to do as it is to find out what he can and does want to do. When the teacher realizes that a pupil is doing work he is not fitted to do, he should be permitted to try some other type of work. No child wants to be a failure, nor will he be a failure if his limitations are sufficiently understood and his program individualized to show him off to advantage. Success creates a feeling of self-respect. Each pupil must have every opportunity to succeed in school and, at the same time, have an opportunity to work to capacity. To accomplish this, it is necessary for the teacher to be an expert judge of human differences. The pupil should be permitted, within the limits of his ability and scope of his course, to select the projects that he will make. Requiring all pupils in a beginners' woodworking course to make a broom holder is certainly to be discouraged. If the teacher can have a group of projects all involving similar operations for the pupil to select from — particularly in introductory courses—the pupil's interest is more likely to be held. If it is apparent that the pupil cannot do the work, then he certainly should be given work where he can obtain some degree of success.

When courses approach the point where the pre-vocational aspects are present, entrance requirements should be considered. Admission should be restricted to those who have or can demonstrate ability and the course should not be a dumping ground for the school. While high standards should be maintained throughout all industrial-arts courses, on the prevocational level trade standards should be adhered to both in respect to quality of workmanship as well as speed. If a choice must be made between speed and accuracy, it is well to keep in mind

that habits of slowness can be corrected more easily than can habits of inaccuracy.

Many industrial-arts teachers fail to teach the meaning of good workmanship and skills. If a pupil is to be expected to do good work, then he must have an appreciation and an awareness of good work. There are several ways in which this may be accomplished. If a teacher can demonstrate that he, himself, is a skilled workman through class demonstration and teacher-made projects, pupil's interest will be incited as well as confidence instilled. A word of caution should be made, however; the teacher should not let his own projects, interests or hobbies interfere with his responsibilities to his class by working on them while he is conducting a class.

The superficial way in which industrial-arts projects are rated or graded by the teacher is also a factor for consideration. Too often does the teacher glance at the project and if it has a good coat of paint making for a good general appearance, a high mark will be given regardless of the fact that the project may have many defects and not meet the specifications called for. The teacher should, wherever possible, establish objective measures for judging projects. The experienced teacher can, in many cases, judge quite objectively certain qualities of a project such as size, color, design and finish. A display board showing samples of varnished work with various defects as well as a perfect sample with a note explaining the various defects is only one of many illustrations. A procedure which is growing in practice — particularly in vocational machine-shop courses— is to set up inspection centers where projects made by the pupils must meet specific tolerance. The pupils inspect all projects made in the class both for tolerances, finish and general workmanship. In many industrial-arts courses this same practice could be followed.

Too often pupils are not aware of what the proper standards of workmanship are. They have not had an opportunity to see projects with high standards nor to compare their projects with similar projects that are superior. By comparing their work with that of other pupils, they discover their own deficiencies which they will correct or remove in so far as possible. Where they see superior projects, it encourages them to strive for higher goals. The teaching of pupils to detect defective or poor workmanship is an important objective in industrial arts.

The whims of the pupil in wanting to rush through a project so he can start on some other project in which he has suddenly developed an interest, should not be permitted. If a job is worth doing, it is worth doing well.

Conclusion

High standards are possible and necessary in industrial-arts education. People like to do what they can do well. The truly skilled workman derives a pleasure from doing good work not attainable by the mediocre workman. If industrial-arts is to have lasting meaning in the life of the pupil, it will be because he has acquired an appreciation of good work and a skill that enables him to do work that he, himself, can approve. A low standard of school work will not bring this about. Let us keep our sights up and our standards high! Only if we do this can we make industrial arts the rich, meaningful subject that it can and should be.

War-Time Problems *of* Industrial Arts

By V. L. PICKENS
Director of Practical Arts
Kansas City Missouri

TO THOSE administrators and teachers who have had the responsibility for maintaining and extending the industrial arts program during the years of peace, the problems confronting them as a result of the present crisis should be both a challenge and a stimulus.

The shortage of teachers, the nation-wide drive on conservation, the loss of pupils, the demands of various organizations outside the school, and the necessity for shifting the emphasis on certain objectives all contribute problems which must be met.

The Shortage of Qualified Teachers

The greatest problem threatening industrial arts is the shortage of teachers. Enlistments, the draft, and industry are making serious inroads into the rapidly thinning ranks. Many teachers who feel that they are not contributing directly to the war effort because they are teaching youth instead of serving with the armed forces should be persuaded that, in this crisis, men who can teach skills, develop proper habits, and maintain morale in our youth, who must win this war and maintain the peace after the war, are giving service of the highest order to their country. The industrial arts teacher who is tempted to go into industry should remember that a company can train a worker to do a job efficiently in months or even weeks, while it takes years to train a competent instructor for a junior or senior high shop.

Scores of industrial arts teachers who stayed on the job because they believed their services were important to the war effort have been drafted. Much of this irreplaceable loss could have been avoided in the past and can be lessened in the future if local draft boards are informed of the importance of the contribution these teachers make. Surely, superintendents who believe these services should not be curtailed can, by their combined efforts applied to the proper authorities, get a specific order to the local draft boards to maintain shop teachers on the job. School authorities can appear before their draft boards to present their request and many have done this successfully. As a last resort, appeals can be made to the state boards.

Since, under present circumstances, there is no one available to take the place of a shop teacher who resigns, hundreds of shops have been closed and thousands of boys and girls have been deprived of much needed technical training. It has been reported that England recalled to the classroom men teachers drafted into the armed services when the number of cases of juve-

nile delinquency increased at an alarming rate. We must not make the same mistake.

In the elementary schools, however, where the manipulative skills required are simple, some replacements can be made by training teachers—men and women — in special classes and by maintaining in-service training courses to insure a continuous growth in skill and knowledge. Classes for upgrading qualified teachers with elementary skills can be offered, and refresher courses can be given for those who, for some reason or other, have transferred from shopwork. In order to keep qualified teachers in charge, it may be necessary to assign a teacher two shops and let him serve them on alternate days, or alternate weeks. If a competent industrial arts teacher is not available the shop should, of course, be closed.

Conservation

How to conserve what we have for the duration is a problem which industrial arts can help solve. In Kansas City boys and girls have, for the past twelve years, been trained in proper use and care of household appliances and personal belongings. Because instruction has been given during a period of abundance, the techniques have been developed for just such a period as we have now. There is an added meaning to such training when threatened shortage affects every person and supplies have become scarce or nonexistent. To alleviate this shortage an accelerated and extended program of conservation can be set up in every shop, elementary or high school, where special emphasis is placed on repairing one's own or a neighbor's household appliances. Since the accelerated program has been established in the Kansas City schools, hundreds of articles have been repaired, and patrons and pupils instructed in the care and use of hard-to-get appliances. For example, three elementary negro schools under the guidance of their industrial arts teacher have repaired 250 articles in the last sixteen shop periods. Their shops look like second-hand stores or curiosity shops: lawn mowers, garden tools, rungless chairs and rockerless rockers are crowded against leaky tubs, boilers and kitchen utensils. The repair work has done much to tie the community and the school together and has developed an awareness of the need to conserve. Such service can be extended by offering classes after school and on Saturday to Fathers Clubs, P. T. A. groups, or to any interested citizens.

The elementary shops need not, for the time being, be closed because of a lack of supplies, for boxes, scrap lumber from high school shops, and rippings and mill-ends from industrial plants are still available. Most communities, moreover, have quantities of second-hand lumber from dismantled buildings, or have discarded furniture stored in barns, garrets and garages which will yield a wealth of materials. Tin from cans, clippings, and scrap from the larger tin-shops can be used. Luggage and sporting-goods manufacturers can still furnish scrap leather, and the imitation variety is satisfactory for use in teaching the elementary techniques used in the lower grades. By encouraging pupils to bring in old lamps, extension cords, pipe, bolts, nuts, screws and nails, a remarkable amount of useful material for shop work can be collected. Just recently the pupils in two Kansas City schools

collected fifty discarded radios which are being dismantled in order that the parts may be used in a newly organized radio class.

At the high school level there is an abundance of opportunities to maintain equipment and to conserve valuable material. Groups can be organized to repair and care for the tools, machines, and other equipment; to rebuild tool cribs and benches, and, if it is allowed, to repair athletic, laboratory, and other school equipment. Instead of making large pieces of furniture that require a quantity of materials, the pupils may make smaller projects, with the emphasis on economical construction, better workmanship and better finishes. The instruments, T squares and triangles used in drafting can be repaired in the shops. If the school furnishes the instruments, they can be made to last longer by checking out individual tools each period. A tool check system and a tool or instrument panel are very satisfactory for this purpose. Both sides of the drawing paper should be used and the size of drawing can be reduced. If it is difficult to get drawing paper—a very satisfactory substitute will be found in ordinary wrapping paper. Pencil holders will make it possible for the pupils to use their favorite pencil down to the end. If teachers and pupils are available there is no reason, at present, to curtail drafting.

There is, it must be admitted, a difficulty in getting material for the metal shops, but, again the ingenious teacher can find instructional material and can keep classes going without pupils losing much in way of practice and experience. Cast iron can be substituted for steel in most practice operations on the machines and at the benches. Tin cans from the cafeteria, homes, and oil stations are a source of supply for the sheet metal division. In the foundry unit the personal projects will have to be discontinued but each pupil can get his training by using the same metal over and over many times. (Some instructors are using plaster instead of metal in the elementary operations and are finding it fairly satisfactory for training purposes.) More practice with measuring and precision instruments, more theory, and fewer projects must become the rule.

Loss of Students

The exodus of our boys from the high schools to the armed forces and to industry is presenting a serious problem in many school systems. To offset this loss and to insure that the shops and equipment will be used effectively, plans must be made to interest new students who can profit by getting training in mechanical skills, and classes especially streamlined for the youth who will very soon need technical training should be introduced. These courses should include training in the fundamentals of electricity and radio. the fundamentals of shop work and machines as outlined in the pre-induction courses, blue print reading, and the use of measuring instruments and gages. The enrollment of girls in these courses is being encouraged. Since women are taking an increasingly active part in the war production program, no shop class should be closed to them. Where girls have been allowed to enroll for mechanical training the reports indicate that their work is more than satisfactory. At the present writing 71% of the boys and 500 girls in Kansas City's academic high schools have

elected shop. The exodus of the boys from the schools mentioned above, has made it possible for some of the boys and girls remaining to take two or three periods of instruction where the rule has been one. This has made it possible to keep many boys in school by giving them the training they feel is of immediate value.

The use of the splendid sound movie films demonstrating needed skills, talks by service men and industrialists on the value of trained hands in all phases of the war effort, frequent displays of work done by the students accompanied by cleverly designed explanatory material, are a few of the effective means of reaching those who need to be informed. There, perhaps, will never be such another opportunity in our time to instill in so many future parents a love for shop work and a belief that no child of theirs can be completely educated without industrial knowledge and manipulative training.

Coöperating with Outside Organizations

The Navy, the Junior Red Cross, the USO, the hospitals, pre-school groups, day nurseries, Civic Planning Boards, and other organizations are asking the shops to make thousands of toys, games, pieces of furniture, and models.

Supplying the needs of all these groups requires careful planning by the teachers and not a small amount of diplomatic coöperation by the administration, but it also provides an excellent opportunity for the schools to participate in a community endeavor and to build up in their pupils a spirit of unselfish service. Building airplane models for the Navy has stimulated an interest in plane identification, and the knowledge thus gained in the high school class may later become very useful to national defense.

As another example of coöperation with outside organization, the drafting classes in Kansas City are coöperating with local authorities in post-war planning for the city by making drawings and scale models of proposed changes.

The Junior Red Cross has furnished every child in the schools an opportunity to contribute something of himself as he makes toys for children in the bombed areas, games for lonely service men, tables and lamps for the recreation centers and bed tables for their convalescence.

Again, to those administrators and teachers who have had the responsibility for maintaining and extending the industrial arts program during the years of peace, the problems confronting them as a result of the present crisis should be both a challenge and a stimulus.

Psychology *and* Industrial Arts

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ONE could very easily dismiss this topic by stating that since industrial arts has accepted as its chief aim general education and has been shown to conduct its teachings according to this pattern, that all applications of psychology made to general education apply equally well to industrial arts. This would be an easy way of settling the issue, but it would beg the question. Thinking on the topic may better be applied more specifically to those phases of psychology peculiar to or having particular value to industrial arts. We shall accept the thesis that psychological principles applicable to general education are equally applicable to industrial arts, but shall go beyond this and attempt to limit ourselves by pointing out such phases as to us seem to function particularly well through the industrial arts.

The point has previously been made that the aim of industrial arts is general education. This implies that it has content of value to all school children both boys and girls. Such being the case, we immediately eliminate old and fallacious thinking, namely, that this is an area introduced into schools for the sub-normals, maladjusted, and problem cases only. Industrial arts is advantageously situated and of a content so unique that much can be done for this type of individual. Every effort should be given to do the most possible for this group, for after all they are a part of our total school population. Psychological experiments in and out of industry have shown that as skill on a job increases, to just that degree is a higher mentality needed for its execution. Nor does a high degree of manipulative ability in one field preclude that the same will exist in another or in all manipulative fields. Such results would lead us to believe that in industrial arts with the emphasis on creative, experimental, and research types of work, that the higher the I. Q. (other things being equal) one would get in return a better grade of work.

Although industrial arts is not the only area in which the development of motor skills play a prominent part, it does have a contribution to make. Early industrial arts teaching gave chief emphasis to this phase of development. Emphasis today has quite decidedly swung to other factors, yet because of the nature of the content the motor phase will always need to be considered.

We know that early manipulative effort is rather aimless. First, there are the large body movements which gradually develop out toward the ends of the fingers, toes, and other extreme portions of the body. As the individual develops he becomes more conscious of desires toward more accurate manipulations. And finally there is

associated with this attempt at more accurate control, phases of directed mental associations.

If teachers of industrial arts understand this cycle of development, it becomes a much simpler problem to understand seeming clumsiness, awkwardness, material and tool destruction, and lack of progress on the part of some pupils. Adjustments in types and stages of work can be made in an enlightened manner.

In relation to such motor developments then, one is led to question theories such as those which advocate "one best way" of doing a manipulative job. Should this be true we would be barred from all of the fine learning situations brought about through experimentation, research, self-discovery and other equally fine experiences. What a drab situation industrial arts could become should a pupil always be prevented from making mistakes because a "best way" eliminated them. In such situations the "law of effect" which operates through trial, error, and success could not function. There would be no opportunity for selecting between responses nor could short cuts, so desirable in experimental experiences, be utilized.

This very concept, "a best way," no doubt is responsible for much of the friction between Industrial Arts and Vocational Education. Skills have their place, and corrections of wrong methods should be used, but not, however, to the extent that all creativeness and initiative on the part of the pupil is destroyed. Our problem is that of changing crude random and mass activity to the more elaborate and detailed performances which produce as nicely a developed problem as a pupil is able to produce, not, however, at the expense of the wealth of general knowledge tied up with each problem.

There are children who will never be able to progress far beyond the mere manipulative experiences in industrial arts. For the majority, we are happy to say, however, manipulation stimulates investigation. In such situations the mental and muscular activities are combined. Satisfaction comes largely through the information resulting. The highest element in this experience comes when, rather than just making things, the child also asks himself such questions as "How?" "Why?" and "What for?" and proceeds to supply the answers.

Knowing that such are the workings of the mind of the average child it becomes the problem of teachers of industrial arts to set up programs that will give opportunity for activities which provide for every need of the child. In place of stressing specialized skills only, it therefore becomes necessary to provide for treatment of the whole problem—whole method versus part method. We must set up situations where phantasy (although sometimes undesirable) may provide the setting for creative expression. Day-dreaming can thus be translated into mental incubation for good.

Unless considerable freedom for pupil selection of experiences, for freedom to find his own materials and processes, for freedom to solicit help when and from sources needed, is granted, little in the way of creative work will result. Such freedom will aid exploration and guidance. It will be comparable to the problem of Industrial Personnel Departments in locating and placing workers in best jobs for individual needs.

If, as psychologists believe and ex-

periments seem to show, it is more difficult to re-teach than correctly to teach a first experience, then our method of freedom and experimentation is wrong. There is the possibility, however, that other values received through such methods may far outweigh the element of difficulty of re-teaching.

The policy of freedom and experimental procedure also makes more adequate provision for adjustment to individual differences. Psychology places great emphasis on individual adjustment in vocations. If such procedure is desirable in vocations certainly it is doubly desirable in child development. Schools, generally, are devoting much time and energy to this phase of school work. Industrial arts seems to have unusual possibilities for contributing its share of help.

No matter how carefully a group of pupils may be selected on such a basis as intelligence, mental age, or mechanical aptitudes, there still remain fundamental individual differences. There may be variations in capacity to will to do things, physical differences, differences in attitudes, or differences in moral standards.

In progressing from the manipulative through the investigative, which provides intellectual appreciations, the child arrives at an interest in color, shape, and the general applications of them. This might be termed an aesthetic interest. Satisfactions are derived through the beautification of problems. Where in the other stages it was a case of crudely assembling parts to satisfy the urge to manipulate or to answer questions in experimentation, it now becomes a problem of adding some beauty to the creation because the child has had called to his attention beautiful productions or he notices them all about him in daily life. He sets for himself the problem of incorporating these principles in the things he creates. According to psychological thinking and experimentation these aesthetic principles and appreciations can be taught. Industrial arts offers a fertile field for such instruction. Psychologists believe that individuals differ in this experience, that aesthetic experiences are quantitative rather than qualitative, that they differ in degree and intensity, and that there are different combinations of the experience. If this is true, then industrial arts is justified in the belief and resultant method of the "Arts being individual."

And finally the individual becomes interested in other people. He learns that other people may be used to help further his plans. He becomes interested in helping classmates who desire or need help. He learns to give or solicit coöperation when the occasion demands. From his freedom in industrial arts experiences, because of encouragement to observe other people at work, because of his research in experiments, and because of his responsibilities in industrial arts personnel organizations, he learns social responsibilities. Through educational tours he observes people at work coöperating and working together. He finally learns that all of life is a give and take social affair. Industrial arts has much to contribute in this field.

Industrial arts provides situations for the building of socially desirable habits. Such situations occur less frequently and less realistically in other curriculum areas. The essential character of the work is such that some of the most significant habits of social life are obvious conditions of success.

Among these are honesty, self-control, the assumption of responsibility, and coöperation. All of these are conducive to moral behavior. None of them will result necessarily from contact with industrial arts, but all may be in part, formed through this phase of work.

Emotions are considered as reactions to outside stimuli. Emotions are very intimately tied up with the whole problem of personality, for personality is the sum total of our reactions to the life situations which we experience. Personality is really the degree of adjustment one makes to these emotions.

Industrial arts, it would seem, is a most desirable area in which to give consideration to the development of personality. With the freedom that we are able to give pupils in their work, our class situations become more nearly life situations. Freedom of movement, freedom of choice, freedom of association all set up, as nearly as a school can, real life situations. If a pupil is guided in proper adjustments in such school environment, certainly he is making worthwhile preparation for adjustments out of school. Although work conditions in our laboratories nowhere nearly approach life working conditions, they provide opportunity for adjustment to emotional situations which could never be duplicated in a static classroom environment. There is also a better opportunity for the administration of a little praise and the elimination of much nagging when pupils work according to their own ability and progress in accordance with it. There is a better opportunity for observing true and unadulterated personality in an arts laboratory such as has been described than in a static environment. Individuals act more naturally under circumstances which they thoroughly enjoy and which are gauged to their abilities. One finds here a close resemblance to job satisfaction in industry, which experiments have shown is more conducive to wholesome personality development.

It is possible that the length of our class periods enter into this picture of personality development. Children as well as adults become irritable when fatigued. Class periods adjusted in length to suit different age groups might be an aid. The one-hour class period, now somewhat more common in industrial arts than formerly, does meet such requirements. It is also an element in safety as it is in industry. The shorter class period will no doubt also conform more closely to the fatigue curve experienced in industry.

The whole field of safety (an area of psychological interest) finds much need for consideration in industrial arts. Applied psychological findings in industry on safety apply equally well to the school and especially to industrial arts work. Such factors as heat, ventilation, light, sizes of tools and machines, placement of machines, fumes, noise, and other factors falling in this category, do much to retard or stimulate progress in industrial arts classes. Safety, although only recently receiving much recognition in the general school program, has long received very marked attention in industrial arts.

Guidance certainly offers possibilities for the industrial arts area. Some of the other subject areas provide information upon which pupils may base decisions, but few offer the opportunity for actual tryouts as does industrial arts. Exploration in a wide offering

of materials and processes is most helpful. The kinds of methods employed in industrial arts make possible a wide variety of observations not available in other areas and sometimes even more helpful than test returns. The attitudes of pupils, because of the freedom and kind of work available, set the stage for a more intimate type of relationship between the pupil and teacher. In fact, industrial arts situations are many times conducive to proffered confessions on the part of pupils. Such would hardly be expected to occur in the academic or traditional classroom setting.

The whole field of avocational interests, so fruitful for a beginning or starting point for adjustment to individual industrial arts differences, also offers possibilities. Findings show that a very large number of people indicate avocational interests in harmony with their vocational interests. This information is of interest and value to anyone doing guidance work. It is recognized that all teachers assist, to a degree, in guiding pupils.

Industrial arts, therefore, assists the school in helping to locate individual differences which are so vital in the adequate and efficient guidance of children. Exploration, avocations, personality development, adaptation to individual differences are all means by which industrial arts makes contributions to the function of guidance.

The efforts made in providing for the physically handicapped, the abnormal, and the maladjusted pupils earlier mentioned in this paper, become a part of both guidance activities and the effort to adjust individuals to their environment. Industrial arts has made some effort to adjust individuals to their environment, and in many instances has been quite successful.

We need to keep ever in mind the fact that the logical arrangement of subject matter does not always harmonize with the developing nature of the child. It is possible that we need a treatment of content and method which is more psychological in nature and less logically arranged.

In an effort at guiding individuals into integrated orderly beings who will function efficiently in that portion of society in which they need to live, it may be that a great deal of our help for such accomplishments will come through the field of mental hygiene. Progressive education, of which a free arts workshop is a part, sets a good stage for the work of mental hygiene. It provides situations in which children may learn to know themselves through the processes of actual living experiences.

Conditions which promote the functioning of mental hygiene, and incidentally effective living, are produced through taking an objective attitude toward class work and the child, through helping the child to gain insight into his own conduct, through establishing a confident relationship with pupils, through helping them (through interest in their work) to attend to situations at hand, through assisting them in planning activity of interest and value to them individually, through providing satisfying, stimulating and worthwhile work, and through encouraging normal social participation. Programs of industrial arts education can and do assist through all of the above-mentioned means.

Children, to do good school work, must be happy individuals. Observa-

tion of children at work in industrial arts laboratories verifies the fact that such situations actually do exist in schools. Being happy is part, and a very vital part, of wholesome personality building. Industrial arts should and does accomplish this result.

Although industrial arts is not unique in its position for teaching pupils how to study, it can and does contribute in this aspect of learning. The planning, research, execution, and evaluation necessary in industrial arts problems, if properly taught and emphasized, establishes patterns for problem solution. Since the newer methods of industrial arts instruction involve greater quantities of reading and research, knowing how to study becomes more essential in individual accomplishments and progress in this area of work.

Evaluations are always essential whether they be made by pupil or teacher or by both. Traditional subject content is well provided with evaluating materials and means. Industrial arts, because of its freedom of method, experiences some difficulties in making the more objective evaluations. It is true, however, that the nature of industrial arts work, in a measure, provides means of evaluation not available in other areas of school endeavor and therefore may not need to rely as closely on standardized objective measuring instruments. In fact with the individualization of instruction provided for in industrial arts it remains a question as to whether such testing is entirely feasible. The reference here is largely to achievement tests.

There are some tests available, however, of which industrial arts people should avail themselves. Intelligence test returns are always a part of the picture. Interest tests, those few which have proven of value, have possibilities for industrial arts. Aptitude and capacity tests should be of great interest. Attitude tests and personality tests have as much value for industrial arts as they do for other fields. Appreciation tests are of particular value to industrial arts.

Whether or not the industrial arts people have availed themselves of all the possible values psychology has to contribute, remains a question. There is an indication that psychology is today more than formerly, being studied by industrial arts people because of the helps we believe it has to offer. As a subject grows up it needs to give less time to defending its existence and to finding more time for experimental procedures and firmer grounding of its principles. Signs indicate that we are approaching this point in industrial arts. For these points of strength we have the fields of child psychology, adolescent psychology, mental hygiene, clinical psychology, abnormal psychology, adjustment psychology, industrial psychology and vocational psychology upon which to draw.

Mechanical Drawing *for* Girls

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ONE of the needs of our war-torn world is for more draftsmen. The government needs people who can draw maps. War industries need people who can make tracings. The air corps needs people who can teach the men of the ground forces simple mechanical drawing and blueprint reading. The supply of men trained for such work has been exhausted. Ordinarily, more men and boys would be trained as draftsmen, but today there are few, if any, available for such training. To supply this demand both the government and industry are turning to women. Women are urged to attend war-production training courses in tracing, blueprint reading, and machine drawing. Women are admitted to the instructor-training courses in blueprint reading at the aviation training centers. College girls are being recruited for special map-planning courses offered by the government to train draftsmen for the map division in Washington. The only part so far played by the public school in this program is to offer the school facilities and personnel for use outside of school hours. Why not offer this training in drafting to high school girls as part of the regular industrial arts educational program?

It must be remembered that participation in the war effort along the lines mentioned above constitutes only a very small part of the work that can be done by women and girls who have studied mechanical drawing. As we shall see later there are innumerable positions in almost every profession, business, or trade now open to those who have a background of such training.

At Champaign Junior High School the educational program includes exploratory experiences in industrial arts for girls in the eighth grade. Once a week for six weeks they attend each of the six shop classes. Because their time is so limited their observations cannot go far beyond the exploratory stage in any one shop. However, because of the knowledge acquired in this way, the girls become more intelligent consumers of the products of those industries represented in our shops than they would be if they had not had this bit of shop work.

In mechanical drawing it is reasonably assumed that each girl will at sometime in her life be a homemaker. Every homemaker dreams at one time or another of building a new house or remodeling an old one. With this thought in mind we endeavor to give the girls some ideas and standards of design which will be helpful when the fulfillment of their dream becomes possible. Of course, they learn the simple rudiments of mechanical drawing, such as the use of the T-square, triangles, scale, and drawing pencil, but the emphasis is placed on the study of the house.

After learning to use the drawing

instruments, the girls study a brief history of the house. They learn why in ancient times the hunter had a different kind of house from the farmer; why houses built in warm climates are different from those built in cold climates; how the customs and religious beliefs of a people affected the type of houses in which they lived; why frame houses were built in one part of a country while brick or stone houses were built in another section of the same country. These factors which influenced the historical development of the house are particularly stressed in this phase of the course.

The next step is to consider the planning of a house for convenience, comfort, and efficiency. First, the general requirements for the house as a whole are determined. The rooms are classified according to the activity occurring in them, and a way developed whereby the privacy of certain of the rooms may be insured. The girls decide which rooms should have sunny exposure. Then the peculiar requirements of each room are worked out. The class having developed these standards, which should be met by every house plan if it is to promote comfortable living and efficient, effortless housekeeping, each girl then selects and analyzes several house plans found in magazines. Her analysis is based upon the standards set up by the class, and from it she decides whether or not the plans are desirable.

Having studied some of the elementary principles of house planning, the girls learn to draw house plans, just as the architect does. The students become familiar with the more common architectural symbols; they study blueprints from which houses were actually built to see how the symbols are used. The first venture of the girls in making the working drawing of a house is to copy the plan of a child's playhouse. It is drawn to scale, dimensioned, and the symbols used correctly. Then, if there is time, they are given the opportunity to design and draw their own house plan. Most of the girls enjoy this very much.

The last unit is devoted to planning carefully the most important room in the house, the kitchen. To enable the girls to develop their plans efficiently the activities commonly carried on in the kitchen are divided into four groups: storage (food, dishes, and utensils,) food preparation, cooking and serving, and cleaning up. The girls determine the equipment necessary for each group and where it should be placed to reduce steps and effort to the minimum. Two or three kitchen plans that have proved efficient when used are shown to the pupils and the reasons for their efficiency analyzed. Using this knowledge as a foundation each girl then lays out her idea of a modern, conveniently planned kitchen. She is given a mimeographed sheet with every piece of equipment found in the up-to-date kitchen of today, all drawn to scale in two or more sizes and ready to be cut out and laid on cross-section paper. By this method the girl has an opportunity to try various arrangements before finally pasting the pieces on her kitchen plan. The girls seem to enjoy particularly making these kitchen plans.

To date, however, very few girls have followed up their exploratory experiences in mechanical drawing with additional study in the ninth grade or in senior high school. Their failure to do so is due to the conservative attitude of the community, to their re-

luctance to be in a class composed almost entirely of boys, and to the idea that mechanical drawing is a shop course and as such is only for boys. This failure to continue the course is very unfortunate. The girls are limiting themselves to the same old fields at a time when their opportunities for entering new fields of endeavor are greater than ever before.

More and more girls are entering the field of architecture as designers, detailers, renderers, and general draftsmen. Some have established their own offices and are building up well-deserved reputations as competent architects. One of the planning authorities of the Federal Housing Administration in Washington is a woman. How can a girl know that she is neither interested in nor capable of doing such work unless she has studied drawing in high school?

What about the girl who wishes to become an interior designer? That she must have ideas and know materials, color, and design is true. But how can she sell her ideas and her knowledge unless she can present them in a form the client can understand? This is done by drawings. It is evident, therefore, that skill in mechanical drawing is necessary to the interior designer. There is little chance for developing such skill in a school of design, or when working up from the bottom as an employee. Where better could this skill and knowledge of mechanical drawing be acquired than in high school? A knowledge of architectural drawing would also be an asset. Through it, the interior designer would gain some understanding of the structural limitations set by the building which will govern her decorative scheme.

Artists — particularly commercial artists—need to know the essentials of mechanical drawing. The greater their knowledge and skill as draftsmen, the greater the amount of work they can do. Few art schools teach more than the rudiments of drafting. As a result, those girls who study mechanical drawing in high school will have a decided advantage, not only as students, but also as professional artists.

Girls entering the field of statistics can make good use of a knowledge of drawing. It is fine to be able to assemble and interpret statistics; but why not go a step further and make them meaningful to the average person? Charts and diagrams are particularly suited to this purpose. To be able to make them well the girls should supplement their mathematical training with a study of mechanical drawing.

Even the housewife can use mechanical drawing. Instead of moving the furniture around to find the most desirable arrangement she can work it out on paper with much less effort, just as the eighth grade girls learn to do. When the housewife wants extra cupboards and shelves, she can make drawings to show the carpenter exactly how to build them, instead of relying upon words to give him an approximate idea. Outdoors, she will find a knowledge of mechanical drawing helpful in laying out the garden to make the best possible use of the space. These are only a few of the ways in which mechanical drawing is an asset to the housekeeper.

The opportunities open to the girls who have a knowledge of and skill in mechanical drawing are almost limitless. The girl who has supplemented her business, trade, or professional training with this skill and knowledge will find the combination increasingly helpful to her in entering new fields of employment. In many instances it may not be the actual skill in drafting that will count, so much as the ability to visualize, which she has developed through her study of mechanical drawing. There is almost no field in which the ability to form mental pictures showing the construction or operation of objects with which she works is not of decided advantage.

WONDER

"We dismiss wonder commonly with childhood. Much later, when life's pace has slackened, wonder may return. The mind then may find so much inviting wonder the whole world becomes wonderful. Then one thing is scarcely more wonderful than another. But, greatest wonder, our wonder soon lapses. A rainbow every morning who would pause to look at? The wonder which comes often or is plentifully about us is soon taken for granted. That is practical enough. It allows us to get on with life. But it may stultify if it cannot on occasion be thrown off. To recapture now and then childhood's wonder, is to secure a driving force for occasional grown-up thoughts. Among the workings of this planet, there is a *tour de force,* if such terms befit the workings of a planet. Wonder is the mood in which I would ask to approach it for the moment."

C. S. Sherrington: *Man on His Nature,* p. 104.

The Teacher *of* Industrial Arts *and the* War

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THE past two years have presented a confusing situation to industrial arts teachers of the United States. In the absence of any clear-cut statement as to their place and responsibility, many have been concerned about the problem of what patriotism, duty and opportunity demanded of, or offered to them. Many are now confronted by these three choices, (1) opportunities for new positions as teachers; (2) opportunities in industry; (3) remaining in their present positions with the thought of meeting the challenge of the local situation until called for active service in the armed forces.

Let us examine each of these choices and their implications. The adoption by the armed forces of the plan to provide technical training for men in uniform in camps established for specific instructional purposes, called for a tremendous number of men having training for teaching various industrial arts and trade subjects. These positions offered three incentives, namely, (a) salary above the level many teachers were receiving; (b) equipment and shop facilities far better than the usual public school equipment; (c) security on a civil service basis better than some school systems had, and in some cases, the possibility of excuse by the Selective Service Boards from induction for combat service.

This combination of factors has taken both experienced teachers and partially trained college students. So far as the writer knows, no teacher training institution has been able to supply a sufficient number of teachers to fill the vacancies in the schools, nor are the prospects at all promising for the future. There is no question but that the pupils in the schools have already suffered, and will increasingly bear the cost of these unsettled conditions.

Industry has been forced to change over to war production and to increase its efforts for larger output. Industrial Arts teachers have entered various plants under these conditions either because they felt they could do more for the nation by such work than to remain in the schools, or because the financial returns from war industry were greater.

Some teachers have remained on their present teaching jobs until called for military service. In a good many instances these men have been asked to carry an additional teaching load because of the development since July, 1940, of the National Defense, now War Production Workers, training programs. Such teachers are not always able to be as effective in their industrial arts classes because of the extra drain upon their time and energy. Others, not having a part in the

defense training activities have merely marked time until called for military service, or have made genuine progress in reorganizing their work so that the pupils were making projects of definite value to the men in service, especially in their recreational or leisure time.

All of this adds up to a situation in which very serious consideration must be given to the problem of recruiting and training someone to take the place of every man who has gone or will leave his teaching position for any one of the above-mentioned types of service. The other alternative is to lock the doors of the industrial arts room "for the duration," and more than "six months" beyond that time.

Another phase of the matter is the fact that from now on very few high school graduates can enter any teacher-training institution unless rejected for military service. All able-bodied young men will go directly to the armed forces upon reaching military age, and still others will seek to enlist before that time in order to select a given branch of service.

The whole matter requires coöperative effort in order to meet the present emergency as well as the post-war period. For the moment we need to find individuals who can carry on. The War Department and the Office of Education have jointly sponsored the preparation of outlines for basic pre-induction courses. These courses are designed to give a foundation upon which may be based the specialized preparation required in modern warfare. While a number of text books have been prepared to meet this need, and certain types of training are essentially the same as those already in operation, it must be recognized that some of the material and all of the point of view is different from much of present-day industrial arts. The opening paragraph of the general statement of the outline on Fundamentals of Shopwork may be quoted to indicate the point of view,—"The shopwork course for pre-induction training has as its objectives thoroughness in instruction. Half-learned skills and techniques are useless to the Army." In short, the Army seems to need some definite attainments in tool skills rather than general knowledge more or less related to tool use. Competent teachers for this type of instruction cannot be produced on short notice. The suggestion has been made that older teachers who have retired may be encouraged to return to the shops, that the supply of surplus teachers of subjects less essential be given short intensive courses to change over to industrial arts, or that some individuals with a background of industrial experience be recruited for teaching. All of these persons will require some specific training to supplement their present attainments. In some cases that means emphasis upon the tools, machines and material to be used, in other cases information about teaching methods, organization of instructional materials, class management, will be needed. For all, there may need to be some emphasis upon both the material and human elements as well as the philosophy upon which the educational values of industrial arts rest.

Such teachers will need more assistance from the supervisor than the well trained and experienced teachers have required. The problem is a difficult one at best. Many boys are confused and emotionally upset over the uncertainties of military service. The girls

are bewildered by the call for training in activities contrary to past experience and tradition. The new teacher is less extensively prepared than the one to be replaced. Tradition is a further handicap for the woman teacher of industrial arts since women workers in industry are an innovation too recent to be understood or fully appreciated. It will take the combined efforts of many individuals to accomplish satisfactory results under present trying conditions.

What then are the possibilities? First, let us consider the teacher. It is not likely that enough retired industrial arts teachers can be found to make any substantial contribution to the number of teachers needed to fill vacancies. The recruiting of teachers from industry is likewise almost impossible. Salaries in the schools do not attract the type of individual needed. The longer work-week and over-time pay operate against securing industrial workers even on a part-time basis as teachers. The most abundant source — and this is not available in large quantities — will be the women teachers of such subjects as may not be so popular at the moment or those teachers in high schools or colleges who become available because of decreased enrollments, or because their teaching field is not considered "essential" to the war effort. As an illustration, during the past few months, three men teachers of music have come to the writer for consultation concerning training possibilities and work opportunities directly in line with the present need. In two out of the three cases, the individual expressed a preference for industry rather than industrial arts teaching. The reasons given were: (1) greater certainty of remaining on a "war" job than in teaching; (2) probable higher pay; (3) less time and difficulty in securing preparation for an industrial job than to meet the certification requirements. Conclusions cannot be based upon three cases, but these illustrations serve to indicate that the problem of making over teachers of less essential subjects to teachers of industrial arts is affected by many of the factors that have created the vacancies in the first place.

The writer has observed a considerable number of women in training for jobs in industry under the provisions of the programs of National Defense Training, and Vocational Education for War Production Workers. In general, such trainees have been on a par with men enrolled in the same courses. The great majority have not had any college training and many have not completed high school. The barrier to such persons as teachers is consequently not capacity to understand industrial procedures, or to master tool skill. The difficulty is mainly the lack of educational background and the amount of time required to fit these candidates for teaching. Aside from these factors, it may be well to keep in mind that a recent estimate of the U. S. Department of Commerce indicates that approximately 5,000,000 more women will be required for war industries and related fields than were utilized in 1942. If this estimate is correct, there will be few if any women available for training to replace men industrial art teachers.

A second problem will be the scarcity of materials and tool replacements. An increasing shortage, with higher priority requirements, will not only make it necessary to reduce waste to an absolute minimum, but also a re-

consideration of those projects and activities which call for large amounts of material, or for material especially critical in the war effort. Repairs and maintenance of present equipment must have a place of importance rarely if ever given such matters in the past. There will be little or no replacement for the duration.

So far as the future is concerned, two problems confront the schools. These are (1) the future teachers of industrial arts, and (2) goals or objectives to strive for. The present emphasis upon engineering as a profession, and science or mathematics as the all-important subjects will continue to attract large numbers of young people. The wages being paid in industry will make teaching less attractive. A suggestion is that school administrators and those in charge of guidance and counselling programs, will not overlook the fact that teaching is an area of service important and worthy of the consideration of young people as career.

With respect to objectives, there is some danger of the present need overemphasizing the vocational aspects of school experience with tools and materials. We have had a long history of development to secure some degree of recognition as having a subject valuable in the general education of every citizen. We must not lose that position because the emergency calls for hasty preparation in a narrow range of skills for very specific war-time jobs. Our long-range planning must continue to include the recruiting of the best possible human resources for the opportunity of teaching a subject which makes its contribution now to war-time necessities, and again when peace comes, to the education of every citizen.

THE MOUTH: THE RIVER OF SPEECH

"The framers of us framed the mouth, as now arranged, having teeth and tongue and lips, with a view to the necessary and the good, contriving the way in for necessary purposes, the way out for the best purposes; for that is necessary which enters in and gives food to the body; but the river of speech, which flows out of a man and ministers to the intelligence, is the fairest and noblest of all streams."

TIMAEUS 75 E.

War-Time Problems *in* Industrial Arts

Suggestions to Industrial Arts Teachers and Administrators as to How to Feel and How to Proceed Under Present Difficulties

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IN beginning, let us pause to pay great respect to our co-workers in Trade and Industrial Education, in War Production Training, and in other allied vocational activities. They early showed marked readiness to meet the nation's need for manpower of specific types and they have set patterns of initiative and energy, in the execution of new and crucial tasks.

It is significant that the years intervening between the two World Wars were roughly those of most rapid development of trade education in America. By 1940 huge numbers of trained personnel, enormous physical facilities, and well-established plans and techniques made it possible to get underway quickly for sharp increase in special production. Moreover, training efforts through the years previous had provided a reservoir of young men for the armed forces who were ready or nearly ready for mechanical or technical duties, teaching, and management. Thousands of pages will some day be written in review of this major campaign and new federal and state laws will be passed to express the appreciation and trust of a grateful people. When war appeared unavoidable, our vocational education friends were ready and they "went to town." They are still going to town, sending our armed and diplomatic forces nearer and nearer to at least three foreign cities that are the homes of haughty tyrants.

The present writing considers only industrial arts, in-so-far as this curriculum area may be truly differentiated from strictly trade education. Our title mentions *problems* rather than trends. Some changes can be noted in these days in line with the long-time swings and goals of industrial arts, and some new trails are in the making, but we are just now concerned more with difficulty than with direction. We are facing immediate and pressing problems, a patch-work of daily difficulties. We find ourselves in constant need of correct decisions as we meet a series of trying circumstances and situations. We shall make mistakes, some of them hurtful at once and others latent for a time yet, probably, menacing to our cause for a generation. We are at war, and war being bad for persons and nations, can

be equally bad for educational and social movements like our own.

In a certain sense, these are the best days we have ever had and the future seems bright. More people believe in us and in our contribution than ever before and their respect and enthusiasm are likely to be maintained. Many men in the several armed services now profit by reason of skills and auxiliary information gained in our industrial classes and schools. Others, perhaps as many, acknowledge loss through lack of the self-same type of background. Both of these groups will return to civilian life to vote and to wield influence in other ways for the subjects that we regard so highly. They will think and act as fathers and taxpayers, as board-members and legislators. They will constitute millions committed anew to "the greatest good of the greatest number."

American industrial products are playing a conclusive part in the winning of the war, a fact now generally conceded. Any worthwhile peace will be based, similarly, upon our continued heavy production and world-wide distribution. We shall be wise to teach whole nations, by the taste-and-try method, to want more of the things that we enjoy. Raising their standard of living will prove the surest protection for our own and we may trust Americans to rally to this challenge. Furthermore, we shall be in need at home, and eagerly waiting with bonds in hand, to replenish our stocks and to buy new goods in excess of pre-war levels. New styles and newer materials will smother our best judgments. Factories will hum much as now, industrial training will still be at a premium, and a reverse meaning will be at hand for refresher, supplementary, and conversion courses. All this will mean, in turn, more enrollments, courses, and teachers for industrial arts if we shall have acted wisely in the interim and if we shall have done well in meeting the test by remaining intact.

With this introduction we pass to the listing of numerous suggestions about our present problems. These are stated very briefly with full knowledge that many are worthy of extended treatment. They are addressed to industrial arts teachers, just as they have been spoken to assembled groups of such teachers in my state and to campus students during these months of uncertainty and question. Perhaps reading of the list, by teachers of other types and by general school administrators, will serve to enhance their understanding of our present attempts and lead to their more active cooperation.

Thirty-six Suggestions

1. Keep the departments open as long as possible, should there be danger of closing for lack of teachers. If shops and drawing rooms remain idle for a year or two we shall lose the interest of pupils, superiors, and patrons and we may lose the most expensive units of our equipment. Calling college seniors, academic teachers, and craftsmen unable to meet production standards to fill our places in these departments will be generally better than closing them. The lowering of teaching certification standards and the consequent lowering of performance by pupils and equipment would seem to be preferable to bringing the whole action to an abrupt stop or gap.

2. Stay on your instructional job as long as you can. Your work is

worthy of service deferment. If you will bring yourself to be certain of this and if you will be tactful and frank in expression of it, the community will understand. As time passes, and if the war be long continued, the demands of the government upon your school will justify your being in your accustomed place. It is only fair to young boys and girls, who are pointed toward armed or factory service, that those who know them best remain to help them make adjustment.

3. If and when you leave for camp, regardless of the service branch, request to be assigned to technical work or to the teaching of such work. The need is great and those in charge of recruiting and assignment desire that each man and woman in uniform be most appropriately engaged. In the filling of personal history blanks give your background full coverage even if pages must be added to the papers provided.

4. While in service, learn all you can about things of your immediate duty. If this means attendance at school, individual study, or the carrying of courses by mail, well and good. The opportunities for you in other and more advanced classifications will come not so much through attempt to get ready for them as by building an excellent record in what is yours at the present. Be a good service man in the sense of being earnest and fully committed. Do not spend free hours in completing college programs of no connection with the war. Use any such extra time in recreation.

5. If you plan to do civilian work now for pay in evening hours, or during next summer's vacation, try to find employment in basic trades or agricultural production rather than in odd or special jobs. When such wage periods have expired, ask for signed records of these experiences for possible use later as credentials. Changing certification rules and the coöperation now underway between war officials and college administrators about credit should lead each industrial teacher to be alert in this respect. It is not inconsistent with loyalty to the government to be loyal at the same time to one's future.

6. Help to create and to maintain the highest possible morale among the pupils in your school, whether or not they are members of your classes. These are times of doubt and quandary, when friendship and kindly counsel helps both pupils and their parents. Good school morale is a deterrent of youthful crime as well as of thoughts and attitudes lessening school accomplishment.

7. Do all that you can to keep departmental equipment in good repair and in fine working condition.

8. Save materials; be ingenious, if possible, in overcoming shortages of the supplies needed for instruction.

9. Be willing to assume extra tasks, to handle mixed groups or classes, and to accept confusing schedules. Few people today are escaping extra load and inconvenience. Superintendents and principals will be greatly appreciative of smiling help as they carry on, just as the community will be grateful for your activity in matters outside the school.

10. Help your school to guard against encroachment. Help your leaders to turn outside, even governmental agencies, from further assumption of the prerogatives and duties of the schools. Dualism in education, as elsewhere, is as dangerous as it is illogical.

11. Encourage boys to stay in school. Tell them that, during the war and after, a diploma or a degree will prove a fine possession. Advance can be made toward these ends now with less formalism and restraint of desire than is common in normal times. Most students may expect now to complete their graduation patterns by enrollment in courses of personal interest or very definite demand.

12. Urge those who leave school for wage jobs to begin to learn basic trades. Lead them to see that present popular work fields are likely to be the opposite after the war and that present wage levels within them are not likely to be maintained. "It has always paid to learn a basic trade."

13. Urge those going into service to take courses while in uniform, in view of the generous provision for such study now being made. Urge them, likewise, to look forward to completion of high school and college programs after the war when financial aid is apt to be arranged for the purpose.

14. Lend any possible support to the scatter and improvement of apprenticeship. Offer to teach related work for isolated persons under indenture or to help the local master to list and organize related content.

15. Help all you can with the occupational information and counseling program of your school. This is every teacher's opportunity and responsibility and industrial teachers are signally prepared to be of assistance in this realm.

16. If there is a cooperative part-time plan of training in your school or system, learn as much as you can about it and get as nearly ready as possible to take charge of such a program there or elsewhere. The work of the part-time coordinator is pleasant and effective and the demand for prepared and experienced persons in this work is increasing rapidly.

17. Be forceful in attempt to retain all of the floor space now allotted to your type of work. If rooms be lost to other courses and activities of the school they will be difficult to reclaim after the war when they will be much needed.

18. Give sanction and encouragement to private or profit vocational schools only in keeping with established facts concerning them. Some states of the Union have placed such institutions under license and supervision as a protective measure.

19. Do all that you can to help your State Supervisor of Trade and Industrial Education (or State Supervisor of Industrial Arts) to make a fine return on all special nation-wide projects in which Industrial Arts pupils and teachers are requested to engage. Every instructor of our kind should desire that the record of his state on the air-plane model project and similar assignments be very good, as to both amount and quality.

20. Lend a hand with the Farm Shop courses if these happen to be part of the Agricultural Education offering of your school. Many such courses may well be begun in districts where they are not now provided, even without appeal for the usual federal funds.

21. Make a special effort just now to provide Industrial Arts instruction to pupils of parochial schools and other near-by institutions that may be without facilities for this work.

22. Do what you can to the end that the Junior College, if there be one in your community, engage more in

the immediate preparation of pupils for production or armed service and less in anticipation of their college completion and professional status. It may be that the background and talents that you possess would make welcome addition to the offering at this important level.

23. Keep insisting on your readiness and right to instruct in elementary phases of the War Production Training program. We are now faced with certification requirements in this work that may not be continued as production is stepped-up and as more and more workers enter service. Even though you lack the named amount of practical trade experience it may be urged that you are master of useful operations and processes and that you are experienced in teaching the beginning of trades.

24. Identify boys in your classes who would be likely to become good Industrial Arts teachers. Inform them and encourage them to seek the requisite training, when opportunity affords, so that the numbers we shall need after the war may be drawn from among the best. Being forced to choose, men of the universities and teachers colleges would rather have your nomination of a first-rate prospect than any correction of objective data that might be accumulated about him.

25. In the same way, help with the selection and encouragement of boys who would make fine tradesmen after a like period of preparation in vocational school, through apprenticeship, or under a cooperative half-time plan.

26. Try to keep all of the usual upper-grade and junior high school courses going, even if numbers must be small or the personnel of classes must be mixed as to grade or level.

27. Make these early courses more functional than usual by having fewer projects and correspondingly more of practice and drill on selected operations and processes. These fundamental courses cannot be truly vocational or of war training type but they can be made to lean in these directions. Our instruction in these grades or years should be such that it will reduce training time in whatever direction a boy may go next.

28. Take up the courses of the Victory Corps curriculum. Useful outlines are available and books to match them are coming rapidly through preparation by regular publishers under government assignment.

29. Get more girls into beginning classes and have them do exactly what boys do in these usual or standard courses.

30. Plan more group or whole-class projects or jobs for school, community, camps, Red Cross and the like. Some excellent Industrial Arts instructors and shops may be able to secure sub-contracts for actual war parts or pieces. In other words, depend less in the coming months upon the customary individual projects.

31. Introduce new materials or media such as plastics. These can be used now to replace priority supplies and such beginnings will prove very important as post-war activity develops.

32. Explain to all classes and groups the present production needs and possibilities. Request tradesmen, war training instructors, guidance counselors, employers, and representatives of the U. S. Employment Service to help you by personal statements at the school or by providing what you can use to advantage. Close all such

presentations and discussions with a view of the post-war picture.

33. Stock a department room or section of the library with as much as possible of new trade and technical literature—books, bulletins, charts, exhibits, catalogs, etc. from regular and emergency sources—so that pupils may browse to whet their enthusiasm and to increase their grasp.

34. Promote some new courses to extend your service and increase your earnings even if not of manipulative kind, for pupils and patrons, day or evening.

related mathematics—related science
related drawing—related art
graphic presentation—industrial geography
shop physics—metal layouts and developments
mathematics of aviation or of navigation

35. Think in terms of special units to make full use of your equipment

tracing, for girls and women
measuring and checking to fine specifications
free-hand sketching and poster work
radio repair—bench metal and grinding
trouble shooting on autos, trucks, and tractors
home mechanics in view of service shortage
mixed work for graduates awaiting induction
classification and work types in army, navy, coast guard, marine, and air corps.

36. When peace shall have returned, let us hope that Industrial Arts may have strongly survived through our eagerness to do now what seems best and most necessary at the moment. Then, let us return to our more general, fundamental, and accepted purposes and practices. Let us continue to think of our courses and activities as designed to aid in the development, understanding, and readiness of boys and girls, of men and women, for leisure as well as for work.

"It is not enough for us to learn to think in terms of a single continent or a single hemisphere. There is a third thing which we can well learn from Haushofer and his school, and that is that the whole world is a unit. *We must learn to think not in continental but in global terms;* we must realize that there are not seven seas . . . but only one ocean."

From an address by Lt. Commander Wm. McGovern, U.S.N.R., Professor of Political Science, Northwestern University.

Title of the address: "The War in the Far East—Geographical Factors."

Industrial Education *and* The Rigors *of* War

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FOR PURPOSES of clarification in this presentation, Industrial Education includes industrial arts from the elementary school through the high school as well as the trades and industries offering in our high schools, trade schools, and vocational schools. We know that states which do not have vocational schools as such offer varied and effective trade and industrial programs in their public high schools. Both programs will always be essential, and although they are related in many respects, their very difference makes them indispensable to American youth. The rigors of war have turned the spotlight on these programs and are making the layman as well as the educator increasingly conscious of the value of such activities, particularly in winning the war without, we hope, in any way destroying their peacetime significance. Let us examine these programs further.

Industrial arts work is very definitely an integral part of our general education program as it is administered in our elementary and secondary schools. The better schools offer courses in the fields of drawing, woodwork, electricity, metal work, automotive work, printing, radio, aeronautics, and plastics. In addition to the necessary related information, boys receive instruction and develop reasonable skills in the use of machines as well as hand tools in these subjects. Many schools provide appropriate opportunities for girls to pursue industrial arts activities in the shops. Course content particularly for the boys, must of necessity become one of pre-induction training wherever possible. Fundamentals are being stressed, and here again, the communities which have placed a premium upon the manual as well as the mental development of their youth have adequate equipment and shop space to provide sufficient practice with essential theory. Youth cannot gain mechanical proficiency through the reading of books alone, important as that is. Theory must be accompanied by actual manipulative work. Learning through doing is still sound. Due to far-sighted, pre-war planning of laymen and educators, our better schools have been able to pursue this method and have gone a long way in the attainment of some such objectives as those presented here, and which describe briefly the possibilities in industrial arts work.

1. To provide opportunities for the development of fundamental shop skills and appreciations which will serve as a basis for further vocational training and advancement.

2. To acquaint youth with conditions in industry both from the standpoint of the employer and the employee in order that they may appreciate and better understand their problems.

3. To familiarize students with the products of industry in order that they may be more intelligent and appreciative consumers.

4. To provide opportunity for purposeful exploration, experimentation, and self-finding, especially on the junior high school level in order that the boy may further discover his aptitudes and interests.

5. To develop intelligent followership as well as leadership through various shop activities including the shop personnel organization plan.

6. To promote proper habits of safety and health particularly as they relate to shop activities and conditions in industry.

7. To articulate industrial arts with mathematics, science, design, and other school subjects especially from the standpoint of application in order that it may be a vital part of the student's general education.

8. To provide opportunities for growth where the learning and the skills required are commensurate with the capacity of the student, and where he really experiences the satisfaction that comes from success and the completion of a worthwhile task.

9. To provide opportunities for the development of desirable habits of thinking through learning, analysis, planning, application, and performance in the shop.

10. To help develop well-rounded-out individuals capable of using their hands and their heads whether it be in pursuit of wholesome leisure-time activities or in the more serious business of earning a living.[1]

Unfortunately in too many communities in America we have constructed public high schools with no shop facilities whatsoever and in which effective pre-induction training programs are difficult to establish. Theory is not enough without the practice. However, great credit is due the school administrators, teachers, and laymen in communities where, due to a lack of shop facilities and equipment, cooperative arrangements are being made whereby boys may learn on machinery in garages and privately owned machine shops. How much better it would be, particularly from the standpoint of coping with the rigors of the present war, if more schools had made adequate shop provisions in the first place in order that willing youth might now better prepare to serve their country in times like these.

From the standpoint of administration, industrial arts programs may be classified into two categories—the unit shop and the general shop. Both of these types of shops are necessary and each has a very definite place in our school system.

The large school whose administrators have the proper conception of industrial arts still adhere to the unit shop plan. Here each boy is engaged in the same activity at the same time in a well equipped shop.

The unit shop is readily justifiable in the large school where enrollments are sufficient to warrant such a plan. Students thereby gain the maximum opportunities they so sorely need, while the teacher is in a favorable position to render maximum assistance to the

1 Hippaka, Thomas A., "Industrial Arts Objectives." "Industrial Arts and Vocational Education." p. 200. May 1942

pupils and to really give them basic training in industrial pursuits.

The general shop plan was designed primarily for the small high school with its limited enrollment. In such a school it would not be good economy to install unit shops and have them stand vacant for the want of students. The single general shop has been a boon to youngsters as far as industrial arts is concerned in our small high schools throughout the land. In Iowa alone, about six hundred of our better than nine hundred high schools have an enrollment of one hundred or less. Our better small high schools are making a serious effort to offer at least drawing, woodwork, metal work, and electricity on a general shop basis. More ambitious programs include additional subjects like automotive work, printing, radio, aeronautics, and plastics. A good plan is to divide a class into four groups, each group participating in a different activity at the same time. It is quite generally agreed that four activities and four groups in a class of twenty-four should constitute the maximum attainment expected of our better teachers.

For some time prior to the present emergency modern high schools in gradually increasing numbers were making it possible for regular day students to make some preparation for a definite vocation. We had begun to realize that attending high school would constitute the last school experience for thousands of students before they were to enter some kind of gainful employment. Considerable progress had been made in this direction, when it was to be curtailed at least temporarily. Suddenly, the immediate future of boys in our high schools was pre-determined for them. As a result of the recent turn of events they are to become fighters. Their job will be to destroy the enemy with powerful and complicated machines of war.

As the times change so do the various functions of our schools. This time of crisis is no exception. The public schools are taking on added burdens with their accompanying responsibilities, all of which brings us to the war-training picture as we find it in our high schools.

Already the war department is reaching into our high schools. Where the purpose of the shop work has been to add to the student's general education, we have begun the training of thousands of specialists so necessary in modern mechanized warfare. Principals of 50,000 high schools—public, private and parochial have already received outlines of courses to be offered students who face induction. These courses call for long hours of study in electricity, radio, shop work, machines, and automotive mechanics. Another ninety-hour course in shopwork leads to one hundred eighty-eight jobs on machines. A third course leads to two hundred twenty-eight specialist assignments. Fifty jobs will become avaliable to men trained in automotive mechanics and thirty-five to radio specialists upon completion of courses requiring one hundred eighty hours of study. Job specifications as well as the training will be modified as the war progresses, but the modern high school will not be found wanting. When the final score is added up our public high schools will have made their usual effective contribution through every one of its departments, including that of industrial arts.

We come now to the trades and industries part of our industrial educa-

tion program. Approximately twenty-five years ago some of us were struggling with the problem of providing for the boy and the girl who had left our public schools prematurely. Our first effort we called the continuation school. Too often it was housed above a laundry, in a garage or in some abandoned and more or less dilapidated building that no one else wanted. The pitiful thing about the whole business was that we were attempting to overcome the shortcomings of our public schools of that day under even more adverse conditions as far as housing and equipment were concerned. Persistently we pioneered in this work until the enterprise came to be known as the vocational school which it has been ever since.

Trade and industrial courses were immediately introduced into these schools. Eventually both labor and industry took an active interest in vocational schools, and they have continued to do so through the years. The best of these schools are truly a coöperative enterprise between labor, industry, the local community, the state, the Federal government and the student who benefits from them. While these schools originally prepared people for industry and the world-of-work, they were soon teaching people how to live a life as well as to earn a living. During their inception they aimed to serve the youth who had left high school; today, they are largely schools of adult education.

In the states where we do not find vocational schools or trade schools as such, trade and industrial subjects are taught in our high schools to young and old alike. The same unit shops used by regular high school students are often used by tradesmen and other adults as they aim to improve themselves. Here we see the adult education program administered by the public school board of education.

"We never close," is the slogan over the front door of many of our vocational training schools today. Desperately we are making up for lost time, for we want no more of this "too little and too late" business. Better than five and one-half million war workers have already received training in our various vocational training programs, including the pre-employment training, supplementary training, and training within industry.

The parting "shot" from our army at the close of the American Vocational Association Convention of 1943 was, "You in vocational education have accomplished much and we salute you. However, you must do more for the road ahead is a difficult and a long one."

Let us look at the immensity of the task which lies before us. This is a war that requires technically trained men who fight with the most hideous and destructive war machines ever known to man. There are better than six hundred specialized jobs in the army alone, which estimate does not include the other services. A minimum of sixty-eight men out of every one hundred must be trained for highly technical military jobs before they are ready for combat duty. An additional eighteen men out of every one hundred must be trained for highly technical military tasks if they are to render the greatest possible service to their country in these critical times. No doubt the estimates are higher now, but we note from these calculations that at least eighty-six men out of every one hundred in our armed forces

must possess mechanical skills in varying degrees and kinds.

For a moment may we consider the complexity of modern war equipment. Let us take the tank as an illustration. A medium-sized tank costs $60,000, the guns of which are fired by electrical control from a revolving turret, whose range is three hundred sixty degrees. The tools alone for such a tank cost six hundred dollars. Tanks are equipped with two-way radio sets costing three thousand dollars, while the tank itself is propelled by a power unit costing six thousand dollars. Such is the complex character of our equipment in every branch of our armed forces, including the marines, the navy, the air force, and our commandos. Boys who only recently attended our high schools and colleges or who worked in the corner grocery store are now operating these complicated monsters of death and destruction.

How had our way of life, of which our school system is an important part, equipped our youth for a war such as we are now engulfed in? These boys had been taught that no one could possibly attack us; that we were invulnerable; that we were so isolated here that we did not need to concern ourselves about war in Europe or Asia; that we did not need extensive armed forces; and that those who would warn us of our impending dangers were warmongers. Indeed, too many of us were living in a fool's paradise where life was carefree and the sky was the limit. In spite of the emphasis placed upon health, as a nation, we were not in the best physical condition. In too many instances our knowledge of world conditions, world geography, and the people of other countries was woefully inadequate. There was some question regarding our literacy. We know now that of the men declared physically fit for combat duty thus far, 450,000 of them can neither read nor write. More than fifty per cent of our men have never had any mechanical training, while the army must have at least eighty-six per cent of its personnel so trained. Active duty in our armed forces demands of every combatant good health, literacy, intelligence, courage, a spirit of combativeness, technical skill, fighting skill, physical fitness, mental stamina, a clear understanding of why and what we are fighting for, faith in God and our way of life, and certainly the spirit of adventure. Youth is fast catching up as far as these qualities are concerned, but it took the rigors of war to blast us out of our fool's paradise and bring us to our senses.

We are told that before the close of the present year, 1943, we must have sixty-five million of our people actively engaged in the war effort. Since industry, agriculture, and our armed forces are to absorb these people, a large percentage of them must be technically trained. Some will need to be trained from "scratch," others will need to be retrained, while still others will need none or very little training. At least six million of our workers in industry will be women. Training programs for these people are in their infancy. We will have eleven million men in our armed forces, so that from these figures we readily conclude that our army leaders knew what they were talking about when they told us that "the road ahead is a difficult and a long one." The magnitude of the task is self-evident, and our vocational teachers will be equal to the task, come what may.

Times of crises demand critical evaluation of our various public institutions including our educational system. First things are coming first. Superficial and unimportant activities are being eliminated. All of us wherever we are, must render even greater service. Curriculums are under constant scrutiny and revision. Duplications and overlappings are being cut to a minimum. Student foremanship and personnel plans are being improved in order to permit larger classes. Greater coöperation, self-government, and self-discipline are being secured from students where the acuteness of the world situation is being adequately presented to them. In spite of the grave teacher shortage, standards of work are being retained at the highest possible level. Teachers are teaching larger classes and more of them in order to make up as best they can for the teacher shortage which thus far has reached 60,000 in the United States.

Apparently it takes a catastrophe to bring about a return to basic concepts. Concepts that are not sound do not stand up when they are subjected to the severe test of an emergency. This is so in education, and it is interesting to note a few homely truisms which are not direct quotations nor are they necessarily of the author's making, but which seem to stand out in bold relief at the present time.

1. You cannot become a mechanic by reading a book.

2. Learning through doing is still sound.

3. If the learner has not learned, there has been no teaching.

4. Necessity is still one of the best, if not the best motivator.

5. As far as learning is concerned the proof of it is in the ability to do the job.

6. The whole individual still comes to school.

7. The learner must be taught the fundamentals.

8. Passing is not good enough.

9. Speed and accuracy are indispensable.

10. You make only one mistake in a parachute or an airplane.

11. Balance between specific skills and general background is still important.

12. Every learner is human and should be treated as such.

13. The conditions under which a learner learns should be as life-like as it is possible to make them.

14. The student cannot play around when practicing and expect to do the job when it really has to be done.

15. We still do our best teaching by setting a good example during a well-planned demonstration, or better yet, during actual performance.

16. It will always be just as important to learn to live a life as it is to learn to earn a living.

There are others to be sure, but these few rather commonplace and scattered truisms indicate the healthy trend of the times in the field of education.

Vice-President Henry A. Wallace speaking before the Free World Association set forth four duties which each and every one of us owe our country today.

"1. The duty to produce to the limit;

2. The duty to transport as rap-

idly as possible to the field of battle;

3. The duty to fight with all that is in us;

4. The duty to build a peace — just, charitable and enduring."

We, in the field of Industrial Education, are in a most advantageous position to assume our just share in the performance of such duties. These are the solemn obligations imposed upon each and every one of us by the rigors of another world conflagration. Surely we will continue to put forth every ounce of strength in the performance of these duties in order that victory will be certain, and that peace "charitable and enduring" will be ours in our time.

"All knowledge to be actively a part of our thinking must be used and practiced repeatedly and in many different ways."—STEPHEN S. BUSH, "The Undue Dominance of the Dissertation in Training for the Doctorate," *School & Society.*

"Our lack of dynamism, vigor and creativeness seems to me to arise from the too exclusive pursuit of technical and intellectual objectives. Our work has been devitalized and dehumanized. A more complete humanity, in the Greek sense, must be directly involved in our system of training."—STEPHEN S. BUSH, "The Undue Dominance of the Dissertation in Training for the Doctorate," *School & Society.*

So You're Going to Teach English

By ROBERT KING HALL
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SO YOU'RE going to teach English? That's fine. But what else will you do?" These questions are being asked of many young people in all parts of the United States — of young people who are looking forward to joining the increasing flow of English instructors from this country to the Latin-American Republics. And in not every case is there a clear-cut, well-understood answer to the query.

There are great possibilities for young people who wish to teach in South and Central America—opportunities for service, and, to a lesser degree, for their own professional advancement. The teaching of English in official schools of most of the southern nations is barred at present because of necessary restrictions against foreign teachers of language. But in nearly every major city there are rapidly expanding cultural institutes, private schools and language classes receiving subsidies from private North American foundations or from some division of our own federal government. These are desperately in need of trained teachers and some of their appointments are highly attractive.

There are, however, certain general considerations of which prospective teachers will do well to take careful note. Many of these positions, if not most of them, will probably be temporary. Where thoroughly competent local teachers can be found, it has been the usual policy of most governments to protect their native supply of professors from undue competition with foreign. Also, such an importation of talent is not economical over a long period of time, since the differential in salary and living levels is heavily weighted against the retention of a North American teacher. But at present as there is a marked shortage of really well-equipped instructors, private and official agencies are assisting in the financing of English classes, and such positions are available.

A contract for a residence of a year or two in one of the Pan American Republics offers at least two opportunities to those men or women who have the somewhat unusual qualities necessary for such a position. The first is that of providing a technical service which is extremely necessary, and has immediate and considerable utility to the individuals and society of friendly nations. No person who has seen the thousands of private students of English trooping to class in a single large South American city, such as Buenos Aires for example, paying for the privilege of studying in their few free hours of leisure after the day's work is done, can have any doubt as to the sincere interest in and demand for English. But even more important than this providing of a technical service, is the possibility of establishing a much needed cultural link between the Latin-language nations and our own. An instructor, if he is a person who

commands the respect of his students, has a position of startling importance. His way of thinking unconsciously infiltrates the psychology of his class; his way of life becomes a symbol which stands for that of his nation; his explanation of language carries with it a constant content of factual information which may in a little time completely alter the attitude of his students. In a word, he has the unique opportunity of being the casual goodwill ambassador; the one who wins adherents by a demonstration of utility, not by a clumsy and too-often objectionable propaganda.

The type of person who would attempt this work must combine a peculiar set of rather divergent characteristics. He must be one who has a sincere interest in teaching, and a sincere interest in the people he is going to teach. He must be informed, at least to a passing degree, on the history, culture, laws, and psychology of the particular group that he is going to. It is not enough that he know something of "Latin-American" studies. The culture of Argentina and Brazil, though their frontiers meet, are as different as the poles. He should have at least enough of a command of the native language of his students to enable him to live easily and gracefully. By this it certainly is not implied that he must be fluent—even a beginning student of Spanish or Portuguese might prove to be a most valuable teacher. But it *is* necessary that he show the courtesy of attempting to learn the language, and that he reach as a minimum the level of a traveler's vocabulary before leaving the United States. Once in the country of his work he will find that his fumbling efforts to learn will be taken in good part, and may even prove a useful device for getting acquainted. It is an odd commentary on the human personality that people like best those they can help, rather than those who proffer help in return.

This question of language equipment points to a common misconception on the part of many American educators. The professional American teacher of English is quite likely to be unsuccessful in such a position unless he brings to his work something very much more than a mere command of the content and methodology for teaching English in *American* schools. Even the professional American teacher of Spanish or Portuguese may also be a disappointment, if his choice is solely based on his command of the birth-language of his future students and the assumption that if he is trained to teach one language he can teach another. The very structures of both Spanish and Portuguese (and for that matter, French, Italian, and German,) make their teaching involve procedures that would be disastrous to the efficiency of teaching English. A prospective teacher of English to foreign classes would be well advised to consider that he was starting in an entirely new field and make an intensive study of the particular technical necessities of this work. Fortunately the process of acquiring this technical equipment is not a lengthy one—a fact which opens up the field to a very much broader selection of candidates. A student of history, for example, might very well decide that a contract for a year or two might offer him a chance both to serve his own nation's interests, to help students of English in a friendly nation, and to accomplish something of a professional na-

ture in his own field, with research on some phase of Latin-American history conducted in his spare time.

This matter of establishing a personal professional stake should be an integral part of any prospective candidate's thinking. Since the positions are almost all of them more or less temporary, it would be a positive credit on the profit side of the ledger if the teacher were able to see how such service would later be of some specific advantage to him. If it is to be but a passing interruption of his real career, a pleasant interlude, it would be very advisable to examine seriously whether or not the holiday is being purchased at too great a personal cost.

If all teachers who are to go to such posts must be trained in the specialized techniques of teaching English to foreign students, there arises a very pressing question of what form this training should take. Clearly, academic controversy over rival "systems" or "methods" should have no place in the teacher's equipment. He should be informed of all, but a devotee of none. Actually, all such programs for teaching English, if they have any pretense of scientific authority whatsoever, are based today on two methods of selecting vocabulary and syntactic constructions: Basic English and the English frequency-count. The Basic English approach is that of seeking to determine those words which have the greatest expressive power—*productive* English. The word-frequency count, on the other hand, is that which seeks to determine those words which will be most frequently encountered in the speech or writing of a person who speaks normal English—*receptive* English. The prospective teacher certainly should inform himself of the details of both. If he is going to do a really good job he will probably find that he will need to use both.

Basic English is a system of simplified English founded on a fundamental vocabulary of 850 words, and seven restrictive rules of grammar, devised and first described by Mr. C. K. Ogden of Cambridge, England, about 1930. It is, so far as it is of immediate interest to a teacher of English to the foreign-born, a system of teaching the core or necessary part of expressive, productive English. With a very simple set of grammatical rules and the 850 words, one may express almost any thought exactly and concisely—and what is more important for the student of the rest of English, may learn all further words by definitions couched in terms of these 850 basic words.

Vocabulary selection by means of word-frequency count technique, however, attempts to evaluate the word-symbol in terms of the probability of the student encountering it in his reading. It assumes that that word which is most often used by the speaker of complete or standard English is necessarily the best word for the foreigner to learn. It establishes, in effect, a receptive vocabulary, which is certainly a vital necessity for the foreign learner who must understand what is said to him by the speaker who does not restrict himself to a limited speech. The frequency count word list is the normal supplement to the Basic English word list, which was itself constructed after a careful investigation of all then-existing word counts. Needless to say there is a considerable overlapping, and in fact from 58% to 93% of the Basic English 850 words appear in the first thousand words listed

by Thorndike, Aiken, Palmer, Faucett and Maki, West, and the *Interim Report of 1936.*

Beyond the methodology which any selected vocabulary imposes, or should impose, upon the teacher who uses it, technique may well be no more than a friendly, natural approach. When dealing with adults the less obvious classroom teaching devices used, the better. It is assumed that the instructor will be a trained teacher of some material, will have mastered the factual content, and will have thoroughly covered the procedures of introducing systematically this material to foreign students. What does need practice is the trick of keeping systematically within the bounds of the words and constructions the learner has already been taught. Beyond this, the teacher would be wise to avoid pedagogy for fear of pedantry.

One of the very pressing practical problems that will face him will be the question of teaching English pronunciation. There are a number of clever mechanical devices and a series of phonetic transcriptions which he might theoretically choose from. Actually he will find the International Phonetic Alphabet devised by Professor Daniel Jones the common one in Latin-America. He may find that simple imitation proves best. But whatever method his experience and local conditions suggest, he would be most wise to inform himself rather thoroughly on English phonetics and phonetic transcription. This, if nothing else, is an insurance against public opinion. For all languages have traditionally been taught with phonetic transcription in Latin-America and the teacher who is not equipped is *ipso facto* considered incompetent.

Perhaps a final word of caution is in order. There have been occasional unfortunate misunderstandings in the past between American contract teachers and their Latin-American employers. Often they were over such simple matters as the details of the manner in which salary is to be paid. Foreign exchanges fluctuate and a salary offered and received in good faith may later prove to be unacceptable in terms of falling currency. Some countries have obligatory retirement funds, health insurance — all have taxes — which may cut the apparent salary far below its original apparent size, unless the teacher is willing to make his home in that land permanently in order to realize on these benefits. The question of travel is a perplexing one, especially with war-time conditions. And one must not blind himself to the problem of readjusting himself upon his return to this country. Most "leaves of absence" will not extend to three or five-year contract periods, and without a "leave" the teacher must face finding new employment upon his return — without the comforting base of steady pay checks and a business address from which to negotiate. Yet for all such problems there is much that is very attractive about teaching in Latin-America.

"So you're going to teach English? Good-luck!"

EDUCATION *and* MORALE

By CHARLES I. GLICKSBERG
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DURING the first week of the war, the nation experienced an exalted but specious sense of unity. The suddenness and destructiveness of the attack on Pearl Harbor, the solemnity born of the knowledge that death had struck, the collective awareness of great danger, these made many Americans feel they were living through a fateful period of history. A crucial decision had been made for them; there was no drawing back now no matter what the consequences might be. The war must be won; that was the supreme imperative. And while our idealism soared, measures for civilian defense became more vigilant, better organized. Plans were hurriedly drawn up to take care of school children in case of air raids. No lives must be lost through carelessness or lack of proper precautions. But for some reason the problem of building morale in the schools was left untouched. The loyalty of the student body was taken for granted. Attention was focused almost exclusively on air-raid drills while comparatively little, if anything, was done to enlighten the minds of the young about the fundamental issues of the war and make them eager to do their share in helping to win the war and determine the conditions of peace.

Is it possible to secure a unified national morale? To ask the question is to suggest the doubt that stands in the way. In a democratic state, there are individual and group differences of opinion and outlook that prevent one hundred per cent agreement on any important public issue. After the surprise bombing of Pearl Harbor, many assumed that we were a united nation at last. They were sadly mistaken. However we define morale, there can be no question that the attitude of a number of people towards the war is far from enthusiastic. They accept it, they are determined to bring it to a victorious conclusion, but there is no outburst of lofty idealism such as animated the masses during the first World War.

If there is little enthusiasm for the war among various sections of the population, it is because they are not yet fully convinced that the war is real. It exists but not for them. It is remote in space. It is largely a matter of headlines and news broadcasts. They scan the newspapers and study the maps and trace the zigzag course of battle very much as if they were spectators at a football game. They are not yet personally and profoundly concerned. What they are chiefly interested in doing is to follow their accustomed routine and preserve the margin of comfort they have always known. They grumble about the rationing of sugar and rubber. They question the wisdom of sending our troops to Ireland. Many are more worried about the imminence of token air raids on our coastal cities than

about the fall of Hong Kong or Singapore. If wishes could all come true, they would bring this conflict to an immediate end and adhere thereafter to a policy of "America First." This may be a passing phase of wish-fulfillment, a difficult stage in the process of adjustment to the grim realities of war for a people caught psychologically unprepared, but it must be obvious to any good observer of the state of public opinion that few citizens, and youth least of all, have any adequate conception of the price that this country will ultimately have to pay in terms of munitions, planes, guns, ships, and human lives if this war is to be won.[1]

Numerous reasons could probably be given for this state of our national morale. First of all, youth has been effectively indoctrinated with the ideal of pacifism, which became an absolute good taking precedence over all other obligations and commitments. No war was a good war. Economic imperialism was the major, underlying cause of war. To the music of high-sounding slogans, the masses were led like sheep to the shambles. Youth would not be fooled again. Students in high school and college absorbed these pacifist doctrines and eagerly joined militant movements to outlaw war.

Another factor militating against the achievement of a unified morale is the misconception that widely prevails regarding the meaning of democracy. Loose and long-winded talk takes the place of coördinated and decisive action. Privileges and rights are stressed at the expense of duties and obligations. A third factor is our regnant materialism. The amassing of wealth has been our dominant ideal. Now that we have been called upon to make sacrifices, to reduce our standard of living, to pay higher taxes, to send our sons to war, some rebel inwardly. The symmetrical pattern of their life has been spoiled. Their comfort comes first. They define democracy in terms of profit and pecuniary advantage. It is an old and disheartening story. It applies to the young man fearful of losing his job if inducted into the army as well as to the capitalist worried about the unprecedented rise in corporation taxes.

In view of these conditions, what shall the schools do? The indifference of youth is a force that must be reckoned with. Scolding and sermons will not convert them. We must first discover why so many of them are indifferent, reluctant to fight in this war. In *The Managerial Revolution,* James Burnham declares: "The youth will not fight willingly because it does not believe in what it is being asked to fight for, that is, in the slogans of the capitalist ideologies. The point is not whether the youth is 'justified' or not in its feelings. These are the feelings; that is what is decisive."[2] If this diagnosis is true, if youth does not believe in what it is being asked to fight for, then the schools must take up the challenge and devise an efficacious educational cure.

The problem of how to combat and overcome these essentially negative attitudes, of how to develop morale in the young, has exercised the minds of some far-sighted educators. Before the

1 The loss during the first World War was approximately as follows: ten million known dead soldiers; three million presumed dead soldiers; thirteen million dead civilians; twenty million wounded; three million prisoners; nine million war orphans; five million war widows; ten million refugees. This estimate does not, of course, include losses of an economic nature: munitions and engines of war; destruction of property; losses to shipping; losses to production due to economic dislocation because of the war. See "War in the Twentieth Century. Edited by Willard Waller. (New York, 1940,) p. 93.

2 James Burnham, "The Managerial Revolution (New York, 1941,) p. 190.

United States became involved in the war, there was considerable doubt whether any such campaign could get under way. Were there not professors and secondary-school administrators deeply opposed to American participation in the war on the side of Great Britain? Who in the universities and high schools of this country would decide what kind of morale should be cultivated? In the early part of November, 1941, the Educational Policies Commission of the National Educational Association made public a statement urging the need for the participation of the schools in producing a healthy state of morale. Instead of dealing in generalities, the report of the Commission made fourteen recommendations which it regarded as essential to any program for defense. Among other things it urged that economic security be developed by lessening inequalities of educational opportunities and by affording training in various types of work; it recommended that the schools be conducted in a truly democratic manner and that the young be taught to understand the responsible part the American people must play in shaping a better world in the future.

If the schools are to be conducted in a truly democratic manner, that means the students must be encouraged to speak their mind freely, to voice their criticism whenever power is abused or the affairs of government are mismanaged. Theoretically, each young citizen of a school has the right to believe what he believes and to advocate whatever doctrine he regards as true or desirable, provided that he does not interfere with the equal rights of others. How are we to interpret the First Amendment guaranteeing the right of free speech if not as the right to express whatever views he cherishes, without fear of censorship or persecution? Since in politics and sociology no final truths or standards of reference exist, propaganda of some kind is inevitable. The best that the conscientious teacher can do under these circumstances is to keep his young charges enlightened, make them aware of the sources of propaganda, develop their critical insight and intelligence. Moreover, if this type of education is to be successful, it must be supported by a genuine drive within the students to strive for and to be content with nothing less than the truth.

If propagandists frequently achieve their aim it is not because people are so naive that they believe everything they are told. Values are affected by what men do and by what they are willing to fight for, but these acts of conscious striving are in turn influenced by the particular symbols with which they are allied and in the name of which they take place. The role that symbols play in determining the effectiveness of propaganda has not received sufficient attention. Analysis may help to free us from the coils of unthinking symbolic loyalties, but most of us absorb our loyalties and our symbols from the world about us as easily and as instinctively as we learn our native language. "For better or worse we are embedded in historical configurations which are characterized by the existence of a large number of comprehensive symbols in the name of which people die or kill."[3] The life of the child is spent in an environment which conditions his mind almost completely; these environmental symbols become loaded with positive or nega-

3 Harold D. Lasswell, "World Politics and Personal Insecurity" (New York and London, 1935,) pp. 33-34.

tive effect long before he is able to compare them with reality and thus test their referential validity. The result is that even in adult life there is often a carry-over of these childish symbolic attachments.

There is no good reason why a democratic government should not be permitted to use propaganda to present its side of any matter and to make widely known its intentions, efforts, and achievements. All this falls properly within the province of education. So long as freedom of discussion exists, so long as the right to criticize or disagree is not denied, so long as the government does not seal up the sources of information, no valid objection to such a procedure can be advanced. Democracy need not be vacillating or infirm of purpose either in peace or war. The teacher who believes in the democratic way of life is wholly justified in pointing out, without resorting to shamefaced rationalizations, the concrete and positive values of living under a democratic system. The truth is on his side. He need not renounce his right to affirm and his role of leadership. It is his task to recommend the progressive values of democracy in action.

There is, however, one difficulty that he must face: there is no objective way of validating faith. Appeals to reason will not do it. Filling students with a mass of important historical and sociological facts will not do it. Dramatization of the precious civil liberties we enjoy and of the proud achievements and remarkable growth of our country: even that will not change the mind and heart. The conversion must spring from experience and be rooted in faith. Yet the psychologist (and every teacher is an amateur psychologist concerned with the mental development and personality growth of his students) is aware that ideals do play a potent part in the shaping process of civilization. The visions and the values that people hold are in reality a product of the culture of the time. The aspirations of youth are conditioned by the cultural milieu in which they live. Society sets the bounds for their dreams and ideals, just as the body limits the flight of the spirit, however untrammeled.

The human organism is not born socialized. Conformity as well as deviation is the result of a long process of social conditioning. Education can facilitate the personal-social development of boys and girls in high school by means of constructive training. No one automatically becomes a good citizen. Social beliefs, social behavior, ideals of coöperation, the subordination of the self to the higher interests of the group, the intelligently-directed desire to participate, however humbly, in the affairs of government and thus contribute to the improvement and enrichment of our democratic institutions — all that must be learned. If this is so, then upon society and particularly upon the schools rests the responsibility for preparing youth not only for the army but also for the role of morally enlightened citizenship so that they may perpetuate and further promote the democratic ideal. Since instinctual gratification is not easily renounced nor the demon of the ego easily overcome, the difficulty of the task confronting the teacher of morale is greater than we suspect. Compulsion of some kind, especially during a period of emergency. may be required, but a democratic society must work out a method which avoids the

totalitarian indoctrination of a Hitler without falling into the danger of *laissez-faire* indifference.

A democratic state is founded upon the assumption that the will of the majority should prevail, but the minority is at all times entitled to a hearing. The business of democracy is conducted in the open. A democracy eschews absolutes. It disdains to deify values, to fool its citizens with false promises and empty slogans. It steers clear of coercive dogmas and deified values. No form of government is final or perfect. It is only relatively so. There is always room for improvement, and the Constitution of the United States explicitly makes provision for those needed changes which are the guarantee of social progress. The believer in democracy pins his hopes to the faith that only those values which are rooted in reality and the nature of man will survive. The attempted perversion of these values, the cult of brute force, the doctrine of racial superiority; these will ultimately fail. But they will not fail of themselves. We must oppose them with the fully mobilized resources of our will, our armed strength, intelligence, and moral insight.

With the amazing spread of the facilities of communication, public opinion has become a power that can no longer be ignored. The mass of citizens—and this includes our high-school population—desire to know what is going on in the world; they crave access to authentic sources of information concerning all problems of government and the prosecution of the war that directly affects them. They are entitled to know if a democratic system of government is functioning for the good of the people as a whole. Their needs and interests cannot be ignored, for a government that is democratic in structure remains in power by virtue of the consent of the governed and exists primarily to promote their welfare.

Hence the importance of instituting experimental methods in education which would take into consideration the fundamental needs of youth. The areas of conflict are daily growing greater, and it is urgently necessary in a time of war to secure some legitimate form of control over public opinion. The responsibility of enlightening the young and awakening in them a spirit of loyalty and social coöperation cannot be allowed to remain in the hands of agencies that may exploit it for purely selfish ends. The task of building morale in youth as in the rest of the population must become the concern of the government, and one of its branches peculiarly fitted to undertake this task is our educational system. The duty of shaping the opinions and attitudes of youth must be placed in the hands of teachers who entertain a dynamic and liberal conception of their educative function. The crisis facing the United States is such that the educator can no longer cling honestly to the pretences of detachment; he must assume his rightful role as a leader of public opinion. He must do more than sell Defense Bonds or denounce the war aims of the Japanese and the Nazis. He must find out not only what public opinion is and how it is influenced in one direction or another, but also how most effectively to employ the resources of education in order to achieve definite objectives. If he studies the subject carefully, he will discover that no amount of indoctrination can strengthen and vitalize morale. "No amount of information and purely intellectual enlightenment can,

unaided, change the human heart, remove individual and group selfishness, or reconcile fundamental cleavages in philosophical outlooks on life. Stronger medicine is needed. Wills must be molded as well as minds."[4]

The teacher, accustomed as he may be to practise the time-honored method of teaching subject matter and disseminating objective knowledge and abstract truth, is not above the battle. He is, when the occasion calls for it, not above utilizing the art of propaganda for the purpose of making the work of instruction more memorable and impressive. He advertises his subject as an absolute good. He quotes authorities, he makes emotional appeals, he waxes eloquent. Though the content of his propaganda may not be open to criticism, he still remains a propagandist.

Propaganda analysis is essential and it is fortunate indeed that in many schools throughout the country it is becoming an integral part of the curriculum. But propaganda analysis which remains on the level of analysis and neglects the important function of training youth to assume their responsibility as citizens now and in the future, is inadequate. It is not enough to encourage students to read newspapers and listen to the radio with sharpened powers of discrimination. It is not enough to cultivate in them a vigilant and aggressive skepticism. After all the evidence is sifted and checked, after all the hypotheses have been tested, after the students have detected and rejected the poisoned bait of propaganda, they are still under the necessity of making up their minds, of choosing their values. It is an encouraging sign to hear Professor Clyde R. Miller of the Institute for Propaganda Analysis declare: "What kind of life do we want to lead? What is the purpose of life? The Institute of Propaganda Analysis has a major assumption — namely, that the democratic way of life, whose criteria are set forth in the Bill of Rights, is the most desirable way of life."[5]

Unfortunately, that is the very thing in regard to which many students are indifferent, however much they may pay it lip-service. Propaganda analysis does lead to critical insight; it does help to develop reflective thinking and a respect for the nature of proof. But the study of propaganda analysis in the schools together with a number of other contributing influences has tended to shape a younger generation that is militantly skeptical in temper. They are not only wary of propaganda; they suspect the validity of all truth, the genuineness of all ideals. Many of them, in fact, begin with the naive assumption that all abstractions, simply because they are complex, are meaningless. Hence their skepticism has in many cases become so complete that they are foolishly prepared to jettison all their beliefs, reject all values. Their eyes rest with hostility on the defects of our democratic society, the friction and injustice and waste.

The counter-measure to this skepticism which in its extreme form leads to nihilistic despair, is not straightforward indoctrination. That theme cannot be emphasized too strongly or repeated too often. Values are relative, but this defence of relativism in politics and government must at the same time be supported by a firm faith—a

4 Harwood L. Childs, "An Introduction to Public Opinion" (New York and London, 1940,) p. 39.

5 Miller, Clyde R., "Propaganda and Press Freedom," "The English Journal." December, 1939, p. 824.

bias if one will—in the ultimate triumph of reason and intelligence in the conduct of human affairs. On this issue there can be no compromise.

And if reason and intelligence are to triumph, this means that in education as in politics, we must cease drifting and satisfy at once the need for creative leadership in this crisis of our history. We must plan vigorously for the future. Action must be taken immediately to create new educational forms more in harmony with the needs of the time. But plans are futile which fail to take into consideration the nature and potentialities of youth. They must be led to feel that they belong to this country, that it is *theirs* to mould and develop, that its future depends as much on their contribution as on that of their elders. It is democracy that we are defending, and we cannot defend it effectively if we believe, as James Burnham maintains in *The Managerial Revolution,* that our democracy is capitalist in structure, that capitalism is doomed, and that the capitalist-democratic ideologies are on the way to the scrap-heap.

Though the schools, for the duration of the war, will necessarily be subordinated to the needs of the gigantic war-machine, it is essential that educators increase their efforts, on a nation-wide, coöperative basis, to build up the morale of the young, and build it up *before* these young men are taught to fire a gun or sent into action. Education has a profound social responsibility to fulfill, and it can be fulfilled on only one condition: the people must understand why we are fighting this war, what our war aims and our peace aims are, what each community and each citizen, old and young alike, can contribute to the all-out war effort. Equally important is the need for implanting in youth the realization that democracy is not static but always on the march. They must be kept informed of the steps the United States government is taking, even in wartime, to solve the problem of social reconstruction. They must discover for themselves the truth that the old policy of isolationism is dead, that for better or worse we are living in an interdependent world, that peace henceforth is indivisible. If the young are to have faith in the democratic way of life, we must not depend solely on patriotic rituals that are so often meaningless because they are not related to socially significant experiences and activities in the life of the students. We must avoid the mistake of securing merely verbal allegiance. Words and gestures alone cannot communicate the dynamic and enduring substance of American democracy. They must be supplemented and vitalized by experiences in democratic living. Youth must see for themselves that they are not a group apart, that they have a precious stake in the consummation of the peace terms, that there is a vision which extends beyond national safety and personal security and a loyalty which reaches beyond the American geographical frontiers to a world order, a federation of man. The cynicism, the hopelessness, implicit in the thesis that wars are inevitable, that "human nature," individually and in the mass, is innately aggressive, must be neutralized by a progressive system of re-education. Love not hate, understanding not tribal prejudices, creation not destruction: these must shape the vision of youth even in wartime. The

The Fine Arts *as* Humanistic Studies

By ROBERT MORRIS OGDEN
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EFFORTS have recently been made to expand and develop the study of fine arts in the American college. The reasons are numerous, among them being the generous support, both spiritual and material, of the Carnegie Foundation. One of the results—perhaps more accidental than intentional—has been a substitution of fine arts for some of the more traditional humanistic studies. In many colleges "survey courses" have been introduced which embrace broad fields of scholarly interest, namely, the physical sciences, the biological sciences, and the social sciences. What is left over often goes into a course called "the humanities." Here one may expect to find whatever is left of Cicero's educational ideal, *humanitas:* philology and literature, the philosophy and history of Oxford's *literae humaniores,* and those relics of the seven liberal arts which have not been absorbed by Natural Science.

When one examines a survey-course in the humanities one may or may not find history in it. That seems to depend somewhat on the historians concerned. At one university it is said that history was first assigned to the social sciences, but when the historians found that the importance of their subject was not fully appreciated by their colleagues in economics, government, and sociology, they withdrew and joined the humanities, where they were better able to determine and control the content and method of this division of learning.

History does not necessarily choose the content and direct the course of these newer attempts to study the humanities at once and for all. A recent volume called *The Humanities, Applied Aesthetics*[1], appears to neglect both the history and philosophy of the *literae humaniores.* Nor is attention given to philology. Instead, a "movement" is assumed, beginning with the Renaissance, in which the name "humanities" was given to the study of the arts, languages, and science. This meaning, it is said, became narrowed as first the physical and then the social sciences broke away, to be followed by the separation of Latin and Greek. Now, we are told, the humanities are acquiring a "broader sense" which embraces "all the subjects of learning except the sciences." This broader interpretation, "for the purposes of this book," and, one may suppose, for the purposes of a general education as well, consists of the fine arts, literature, music, architecture, painting, and sculpture.

It may be unfair to characterize a modern survey-course in the humanities by the contents of one book. Oth-

1 By Louise Dudley and Austin Faricy. New York, 1940.

challenge must be accepted. The battle for the minds of American youth is as important a part of our defense effort as the production of munitions. American education must speak out and act. There is imperative need for insight and understanding to combat the rising tide of racial intolerance and to direct wisely the furious energy being released in the work of destruction. That insight, that understanding will come not from military training in the army, enlightened as that is becoming, but from an intensified and comprehensive program of educational guidance for the young *before* they are drafted, *before* they are swept into the thick of the battle.

TRAINING THE YOUNG

"The best way of training the young is to train yourself at the same time; not to admonish them, but to be always carrying out your own admonitions in practice."

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separate from everything else he is doing. If he really is talented, the training he gets in college is apt to be less than he needs in order to become a musician, and if he is not gifted he may waste much time and effort on music without notable achievement.

After all, the business of a college is a general one, and in order to find an appropriate place in its curriculum the fine arts must achieve ends that fit in with the ends of the other subjects which the college professes to teach. A knowledge of natural science in its broad aspects needs supplementation by a knowledge of man's creative and expressive ways. The fine arts exemplify the highest achievements of contemplation. An educated man will know these results, and will be able to appreciate them even though he cannot practise them. The practice of the fine arts in college is properly an exercise in understanding and not the refined cultivation of a talent for which other schools may be better equipped.

If the study of fine art in the college is to carry on the humanistic tradition, its teachers must themselves be humanists. They must not only know their respective subjects well enough to practise them — at least for the purpose of exemplification; they must also know history and philosophy. A teacher of music, for instance, should realize the relation of his art to painting and literature, and should understand the impulse of creative expression which explains all art. If fine art is to rival philology, its comparative study is as important as the comparative study of language and literature.

It should be noted that the appreciation of art may not lend itself to criticism without a certain loss at first of one's sense of beauty. As Santayana states the case:

> Many writers of the last century called the philosophy of beauty *criticism*, and the word is still retained as the title for the reasoned appreciation of works of art. We could hardly speak, however, of delight in nature as criticism. A sunset is not criticized; it is felt and enjoyed. The word "criticism," used on such an occasion, would emphasize too much the element of deliberate judgment and of comparison with standards. Beauty, although often so described, is seldom so perceived, and all the greatest excellences of nature and art are so far from being approved of by a rule that they themselves furnish the standard and ideal by which critic's measure inferior effects.[2]

Appreciation and criticism are distinct. There is no guarantee that an appreciation of art will lead to criticism and the cultivation of any reasoning power, or that criticism will improve one's capacity to appreciate art. Yet both these psychological processes are important in the study of fine art. Without exposing students to the appreciation of works of art, under conditions suitable to enjoying them, the students will not know what the subject is which they are studying. One often hears that an interest in good literature has been spoiled by compulsory reading and analysis. The same result may follow the faulty presentation of any other work of art. Sufficient though it may be to discover beauty where one can, and enjoy the moment without ulterior interest, such a moment is never a study of art. Neither is such a moment of beauty an end towards the achievement of

2 The Sense of Beauty, 1896, p. 15.

er survey-courses on the subject are known to be historical and more or less philosophical in their ways and means. What one seems to miss in all is a philological approach which emphasizes the "grammar," "logic," and "rhetoric" of the traditional trivium. Some modern educators seem to suppose that the analysis and mastery of man's chief means of expression, language, which in the past was cultivated through the study of Latin and Greek, can now be safely left to the common sense of all who can speak, read, and write.

Is it possible that such eminently teachable subjects as Latin and Greek, together with their modern complements, French, German, and English, have no special merit as means of promoting thought, understanding, and appreciation? Are thinking, understanding, and appreciation served as well by study of the fine arts? Surely we must agree that the function of the humanities, whatever the content, is to make one intelligent and appreciative in the terms of expression which man has acquired. These terms are mainly lingual, for language is the chief vehicle of communicaton, reflection, and thought. It is not the only vehicle, however, and a philological training which sees nothing beyond words and their usages is narrow and may be misleading. Communication, reflection, and thought are elegantly symbolized in mathematics. Dramatic performance, the dance, music, and all the varied arts of construction and design-free and applied, graphic and tectonic—are likewise means devised by man to express his ideas and his longings. It must therefore follow that these are also worthy to share in the cultivation of Cicero's educational ideal. As educators, however, the obligation falls upon us to defend critically the employment of the fine arts for the old and still cogent purpose of rendering man humane. To judge by the varied and miscellaneous content of different survey-courses on the humanities it may be doubted if those who sponsor them are always quite clear what they are trying to do. One obvious thing, and perhaps the most important, is to find a place where those subjects which do not claim to be "scientific" can make their appeal to all students. It is worthy of remark that these subjects which once dominated the liberal arts college should now be on the defensive. Foreign languages and literatures, philosophy and even history, must defend their claim to consideration while triumphant Natural Science exploits its victory as the true basis of knowledge!

Into this situation the newer curricular subjects of the fine arts have made their appearance. Students who fail to master a foreign language, or even their own tongue; who find literary masterpieces, philosophical theory, and the course of history, dull and uninspiring, will sometimes consent to cultivate minor talents for acting, story-writing, dancing, singing, drawing, painting, and modeling. Since any decent interest is better than none, here are ways to arouse reluctant scholars. With many young people now in college who have never been trained to use language and number critically, here is an opportunity to begin with something which they can and will do. There is a danger, however, that these subjects will remain isolated from each other, and from the rest of the curriculum. The training a student may receive in music, for instance, is often

which some curricular device can be turned. The most that can be done is to present the work of art and hope that its beauty may be apparent. The art-gallery, the theatre, the concert-hall — these are places where beauty may be discovered. If such places are accessible to students, so much the better are the means of studying art. Failing such places, reproductions of art, reading of plays, and listening to phonograph-records, will serve the purpose. As a basis for criticism these "laboratory" means of presenting works of art are indispensable.

In addition to these facilities, and much more important, is the character of teaching. The teacher of art, like Cicero's ideal of the ancient orator, must be broadly equipped to know art in its history, theory, and practice as related to life and understanding. It is desirable, too, that the teachers of these subjects should know one another's arts, as the ancient orator knew history and philosophy, including politics and social ethics. This order is a large one, yet should be no more difficult of attainment than was the mastery of humane interests by a teacher of Latin who could be called a "Professor of Humanity." Surely, if there is merit in requiring all college students to take a survey-course in "the humanities," there is an obligation to staff the course with teachers who have mastered, at least, the philosophical implications of this large division of the field of learning.

One speaks of a "common language of art" as though one could teach and use it as Latin, the language of scholarly discourse, was once taught and used. Rich and informative though it is, this common understanding of art is something other than, and different from, the understanding of words in whatever tongue. Understanding art is more a matter of *feeling* than of *knowing*. It is founded in our sensibility to form, and has an emotional setting; whereas to know is to be able to enumerate, part by part, the features of an object or a discourse. We know and understand a language through its parts of speech, and mastery comes only as a result of discipline wherein the forms of speech are not only felt to be precise and elegant, but are also known to be such. A like discipline attaches itself to the performance of an artist in the selection and composition of his materials. Yet the elements of an artist's vocabulary are not, like the words of an argument, separate and self-contained. The notes of a musical composition, taken one by one, may be as significant of a composer's argument as are the words chosen by a poet or an orator. Yet the two kinds of composition, musical and literary, though analogous, are essentially different. Musical notes are but symbols of sound, and music consists of these sounds. Words, on the other hand, are symbols of complex things and events, and have attained a certain independent existence in their own rights. Thus, a deductive or an inductive argument can be expressed in words, but not in tones. One learns with words to communicate the most varied observations and reflections, while tones have little associative meaning apart from their intervals, harmony, and rhythm. A musical discipline is significant chiefly for the understanding of music, and only secondarily for the understanding of anything else. The verbal discipline which makes a poet may, on the other

hand, also lend validity to the most practical business of living.

The discipline of the constructive arts, drawing, painting, modeling, and all tectonic performances, has a larger immediate significance in practical affairs than music, though a smaller one than language. Many things can be more adequately expressed by drawing, constructing, or dramatizing than by words; but these are, for the most part, concrete things. The reflection of our personalities, our feelings and relationships, our movements and judgments, is best expressed by words devised for these several purposes. Revealed though these meanings are in pictures, plans, and actions, the meaning is seldom precise without the accompaniment of its proper verbal sign.

The teaching of fine arts assumes directions so different that a common language of art is not always evident. (1) There are courses in the appreciation of art in which students are familiarized with masterpieces, which are classified with some analysis. (2) Courses in the history of an art may be more "scholarly." Histories of painting, sculpture, and architecture provide fields that have been cultivated in great detail. Accordingly, these historians have assumed an important, not to say dominating, position among the teachers of collegiate art. (3) Courses in the practice of the fine arts are as numerous as the arts themselves. They are taught by specialists — as a rule, artists — who sometimes emphasize performance, and sometimes creative composition. (4) Courses in theory are taught by philosophers, psychologists, and critics. Here falls the highly-varied and controversial subject of aesthetics. There are almost as many theories of aesthetics as there are aestheticians, and in displaying them different writers employ different terms, and adopt very different points of view.

To establish a common language of art in these four directions of study is a most legitimate aim, and one which must be achieved in some measure before the fine arts can play an important part in humanistic studies. We must not be impatient, however, if this "common language" does not quickly emerge; for the language does not yet exist. All that one can properly ask at present is tolerance and readiness to understand the terms of expression employed by all who profess to teach art.

Let the teacher of the appreciation of art realize and make clear to his students that there are "cross-references" from the art he professes to many others, and that beauty is not confined to the particular forms to which he gives his special attention. Let the historian of art realize and make clear to his students that all art has a common origin in human impulse, and that again reference to the development of other fine arts than his own, and to the general course of cultural history, is indispensable to his interpretation. Let the practitioners of art have a bowing acquaintance with artists in other fields, with their problems, their resources, and their comparative means of expression. Let the theorists possess, at least, a summary comprehension of the pertinent philosophical, psychological, and scientific approaches to the study of art; for students need assistance of this sort before they can bring notions of the several arts into one body of knowledge. Needless to say, each teacher following one of these four directions

should be conscious and tolerant of the other three in order that the student may be induced to synthetize his knowledge.

Apart from this aim to provide a common language and common understanding of art, these subjects must also be *disciplinary,* if they are to accomplish a humanistic purpose. Any subject worthy of a place in the college curriculum must be calculated to train and discipline the student. The fine arts have their own ways of discipline, but they also share in the ways that are common to all subjects of knowledge. The teacher and student of fine arts must use language with accuracy and precision, because aside from literature, language is also the chief means of communicating the knowledge and thought which go into any artistic creation. The arts must also employ mathematics — number and geometry, graphics and gestural forms, tonal relations, and colors. All these are important means of definition.

This disciplinary aspect of the study of art is not merely a translation of one art into the form of another. A great deal of so-called "art-criticism" consists of such translations. At its best a writer like Walter Pater succeeds in composing an essay on art or music which is itself a work of art. This, however, is not the discipline to which we refer, but rather one which deals with an art in its own terms. The logic of musical, pictorial, or literary composition is itself a discipline; and while it lacks, as we have seen, the universality of a philological discipline, it has its own merits and values which philology, as commonly defined, does not possess.

Nor should we be scornful of special studies in art, though their connection with its common language may at first seem remote A work of art is as good a subject for scientific, historical, or theoretical treatment as any physical or social phenomenon. In this connection, the writer may be permitted to illustrate the point by reference to his own special subject of psychology. The psychology of art appears remote from the interests of most teachers of art, whether their direction be the development of appreciative interest, historical knowledge, performance, or criticism. In a review of the writer's book, *The Psychology of Art,*[3] a teacher of art summarizes his view in the following words:

> While this book may not do much to stimulate interest in the critical understanding of art, or to guide those who are already interested, it is valuable as representing the understanding of art entertained by conventional academic psychology.[4]

The failure of this reviewer to value "conventional academic psychology" as a means of stimulating "interest in the critical understanding of art" is something more than a personal prejudice. However lacking my book may be in an appeal to readers who are not also psychologists, the problems which it chooses and attempts to solve are not negligible, nor can they be set aside in this cavalier manner. They are, instead, scientific problems, and their solution is as valuable a contribution to the understanding of art as are studies in history and appreciation.

Our reviewer is not alone in his resentment at objective analyses of art. Another writer,[5] in a personal letter, makes this more reasoned statement of

3 New York, 1938.
4 Cf. "Parnassus, December, 1938, p. 35.
5 Carl Thurston, author of "The Structure of Art, 1940.

an art-lover's objection to *The Psychology of Art:*

> You give a minutely accurate account of various aspects of art, but you make them all look like small, and rather lifeless, mechanical adjustments which have little to do with the tremendous driving power that it generates. You describe its various facets, but you do not take it apart to see what makes it tick. You mention few if any of the *intensifiers* by which an artist raises the otherwise negligible details of his work to an unforgettable intensity.

One wonders if a similar objection might not be made to a chemist's description of molecular structure, or a physicist's account of an atom. In both instances one might find that these structures "look like small, and rather lifeless, mechanical adjustments." As for the "intensifier" which makes an atom or a molecule "tick," a physical scientist might prefer to leave the explanation to the metaphysician. This remark does not mean that the work of art, the molecule, and the atom, are not something more than the details of their analysis. Analysis, if true, is always functional; and a whole can never be reduced to a sum of its parts. The economy of scientific analysis requires, nevertheless, a reduction into "aspects" and "facets." If these appear to be "lifeless," that is for want of imagination on the part of the analyst or his reader.

To introduce painting, sculpture, music, poetry, drama, and the dance into the curriculum of a liberal college is to add subjects which provide a new and delightful means of promoting a common knowledge among men. This desirable result will depend, however, upon the relations which are emphasized and employed. A common understanding which is the aim of general education will not result from "sight-seeing" and "listening" courses in which works of art are reviewed without analytic study. To be invited to sample the different kinds of bread in a bakery will not teach one how to bake bread, or even how to digest it. There is an art of baking, and there is a chemistry of bread, neither of which is a direct result of eating. In order to be understood and used beyond the limits of gratifying one's sense of taste, works of art must be studied in the same way in which one studies anything else. If the fine arts are to assume a position of importance and respect among humanistic studies they will not refuse to submit to every means of study which has proved valuable in man's slow process of understanding himself and the world in which he lives. The world of art is a prime source of such understanding, but it may not be usefully accepted as a world where only wonder and magic reign.

Long ago Aristotle commended the study of what we would now call practical arithmetic or accounting when he wrote:

> With a like view children may be taught drawing, not to prevent their making mistakes in their own purchases, or in order that they may not be imposed upon in the buying or selling of articles, but rather because it makes them judges of the beauty of the human form.[6]

6 "Politics," 8.3, Jowett's translation.

EDITORIAL

Training -- Learnings -- Education

By CARL G. MILLER

MISS Dorothy Thompson discusses "training vs. education" and arouses Mr. David Snedden, who says that "the heart of the trouble lies in the term education." He thinks the word "shelters a host of tyrannies."*

Perhaps Mr. Snedden should say that it shelters a host of deviltries, deceits, illusions, inconveniences, and other "cussed things no end" besides all its inspiration and good works. The term is too general for good use, Mr. Snedden thinks, and so do most of us, if we think. Sometimes we don't think—just talk—and we rave on how education is a noble term derived from *educere,* meaning to lead out, etc. or from some other term with respectable ancestry. Then another summer we get uplifted and speak about growth as the great conception of education. But growth is just another damnably general term.

Mr. Snedden wants us to get down to brass tacks and be specific. He would have us use the term *learnings,* which with a clear adjective phrase hooked on can be rather definite—such as learnings of the geography of Argentina or of the best methods of computing interest on loans. But good as the term is, it isn't likely to "take" very fast. It's exact enough but not colorful enough for the popular mind to seize upon readily and put to use.

Something should be done, however, about the term education. If loosely used, it is dangerous. Under the term a deluded person with a degree or two can with public money put over a series of things called education and then in time reach a stage when the public pauses and decides to take a look at what it has bought. "Well," it concludes, "that isn't what we wanted at all." Or: "What sort of skimmed milk is this?" And then comes a "black eye" for education in general. The public needs to be sold specific things in education, and those who supply the goods should try to put out the article according to the specifications of the order. That public must be a satisfied customer.

Mrs. Roosevelt, according to Miss Thompson, would like every one trained — she didn't say educated. Training is more specific than education. A great deal of it is being done right now in a very intensive fashion, and it probably will get results. A term like training would be safer for public institutions working under the general label of education. Among other things, it would protect youth from some half-baked philosophies that are exposed to under institutions with *carte blanche* rights to educate. One needs a lifetime or more for his *education.* Schools could well adopt a term or two that depict exact phases of the larger whole.

* See "School and Society" for February 20, page 214.

BOOK REVIEWS

Fundamentals of Machines. By *Burton L. Cushing.* Ginn and Company, Boston. 1943. 436 pages.

Our young men today who are enrolled in the secondary schools will probably find themselves in the not-too distant future serving their country in one of the branches of the armed services. Our army, as well as the navy and coast guard, it an army of specialists. The modern soldier must know the basic principles of physical science and of mathematics to function efficiently in an army engaged in mechanized war. Mr. Cushing's book follows very closely and implements most adequately the United States Army outline, Fundamentals of Machines—A Basic Course." The principles of physical science that underlie the action of many common mechanical devices are treated. There are suggested demonstrations and laboratory exercises and numerous apt problems. Illustrations and diagrams have been carefully placed to afford maximum use. As a text in applied science, *Fundamentals of Machines*, is of unique importance at this time; in the peace to come, the volume will be a useful adjunct to students in the industrial arts courses. — WILLIAM P. SEARS, Associate Professor of Education. Principal, New York University Training Program for War Industries.

Social Aspects of Industry. By *S. Howard Patterson.* McGraw-Hill Book Company, New York. 1943. 536 pages. $3.00

The new third edition of Professor Patterson's fine survey of labor problems, *Social Aspects of Industry*, stresses the social the social point of view rather than that of management or of organized labor. New information, recent economic changes, and recent legislation have necessitated an almost complete rewriting of the book, but Professor Patterson has maintained the splendid plan of the earlier editions. Here is no mass of multitudinous facts and figures. The book is, as its predecessors were, magnificently suited as a text for college classes in labor problems. Of especial interest are the discussions of the impact of the Second World War on labor.— WILLIAM P. SEARS, Associate Professor of Vocational Education. Principal, the New York University Program for the War Industries.

American Pioneer Arts and Artists. By *Carl W. Drepperd.* Forward by Rockwell Kent. Springfield (Massachusetts). The Pond-Ekberg Company. 1942. xiv and 172 pages.

This is a forcefully and brilliantly written story of the pictorial art movement in America. The author reveals who preached, taught, and executed art on these shores in the days of the nineteenth century. Mr. Drepperd declares that what we have been calling American "primitive" art isn't really primitive at all. "American pioneer art is, literally, the painted record of American in the process of achieving a *fine art* of its own," declares Mr. Drepperd. American art works are rather pioneer in character and they have been neither static nor abstract. Pioneer art has been concrete and spontaneous in America and truly a response to the needs of a people who were busy exploiting a vast continent. Moreover, much of our early work was done by children and by ladies. With great humor, Mr. Drepperd tells of the itinerant painters who went from town to town providing householders with portraits done with a speed truly amazing. Considered in detail are such topics as "Art Instruction Books for the American People," "Teachers of Art to the American People," "Pioneer Landscapes." "Pioneer Genre Paintings," "Pioneers and Amateur Miniatures," "American Pioneer Portraits," "Pioneer Sculptures, Carvings and Plastics," and "Folk Art in America." The volume is profusely illustrated with some of the finest examples of American pioneer art — WILLIAM P. SEARS, JR., New York University.

Industrial Psychology. By *Joseph Tiffin*. Prentice-Hall, Inc., New York. 1942. 386 pages. $4.65 ($3.50 to schools).

This is a sound, competent, and carefully-prepared book dealing with applications of psychology that have been made in industry. The author, the professor of industrial psychology at Purdue, has presented no purile restatement of psychological truisms watered down for public consumption, neither has he written a "pep with a punch" piece of propaganda to stimulate a false and artificial morale. Twelve chapters cover thoroughly and extensively some of the major problems of adjustment in industry and the whole field of personnel relations. The general principles underlying employee testing are especially well set forth and the chapters on mental ability and mechanical comprehension tests and dexterity, manipulative, and achievement tests are as fine as any this reader has had the privilege of examining. The author stresses the importance of a scientific approach to the visual problems in industry. Accidents and safety education are also given extensive treatment. And, of course, the whole question of personality and its relation to adjustment is studied. Appendices include the list of the publishers of the various tests and an extended summary of elementary statistical procedures. — WILLIAM P. SEARS, Principal, New York University Training Program for the War Industries.

The Dynamics of Vocational Adjustment. By *Donald E. Super*. Harper and Brothers, New York. 1942. 286 pages. $3.00.

Professor Super, in this volume, reviews the total problem of vocational adjustment in its broadest and most comprehensive sense To his task, Dr. Super brings a wealth of experience, experience gained in study, in guidance techniques, and in research. "Current books on the principles of vocational guidance," says Dr. Super in his *Preface*, "generally take one of three approaches. They deal with the role of the teacher in vocational guidance, with the role of the counselor in vocational guidance, or with the role of the school in vocational guidance." Dr. Super sets off on a path that has often been neglected. His approach is concerned, first, with the social setting in which vocational adjustment is sought and with the sociological and historical forces with which all concerned must be acquainted if the problems of vocational guidance are to be solved. Especially welcome in a volume of this sort are the chapters on "Economic Factors in Vocational Adjustment," "The Choice of an Occupation." and "The Hazards of Unemployment." *The Dynamics of Vocational Adjustment* is adequately suited as a text for college courses in the principles of vocational guidance. The book is an excellent resume and as such will be very helpful to the busy teacher and counselor. —WILLIAM P. SEARS, Associate Professor of Education, Principal, N. Y. U. Training Program for War Industries.

Wartime Pilgrimage. By *Clifford P. Morehouse*. Morehouse-Gorham Co., New York. 1942. $2.00.

Mr. Morehouse, editor of the Protestant Episcopal weekly *The Living Church*, was one of a delegation of four men selected to represent the American churches at the enthronement of Dr. William Temple as Archbishop of Canterbury in the spring of 1942. Mr. Morehouse made the trip across the Atlantic in a bomber. After the ceremonies in the ancient see-city of Canterbury, Mr. Morehouse remained in war-torn England for two months to study religious and social conditions. *Wartime Pilgrimage* is the annotated diary of Mr. Morehouse's stay in the "tight little isle." Here is some interesting reading but little of any depth or significance on the topic of present social conditions or probable readjustments after the conclusion of the war. Mr. Morehouse is certain that there will always be an England and that the bluebirds will be back over the white cliffs of Dover, but there is very little said concerning just what kind of England the new one will be save that it will, most likely, be somewhat different to the old one. — WILLIAM P. SEARS, New York University.

Early American Wooden Ware. By *Mary Earle Gould.* The Pond-Ekberg Company, Springfield (Massachusetts). 1942. 230 pages.

There is great romance in the study of the everyday things that people use. Miss Gould has caught this romance and the story of her great collection of American wooden ware is replete with interest. Miss Gould began "collecting" some years ago and today she has nearly a thousand pieces of early American wooden ware. But Miss Gould is not content to list the items and simply place them on her shelves. She has delved into the study of the use of these early American utensils and her book is a fine social history of the way our New England fathers (and mothers) lived. Miss Gould's book, so interestingly written and so splendidly illustrated by photographs taken by the author of her collection, should find a place on the shelves of our classroom libraries in the social studies rooms. The book is perfectly fascinating and Miss Gould's indefatigable zeal in research should be an inspiration to those in schools and out. The acquisition of a hobby is very necessary to mental well-being. Here is a fine example of an attractive and stimulating hobby and one of value, too.—WILLIAM P. SEARS, New York University.

Living Mathematics. By *Ralph S. Underwood and Fred W. Sparks.* New York. McGraw-Hill Book Company. 1940. $2.25.

Living Mathematics is unique among the scores of texts that present what has traditionally come to be known as the freshman course in college algebra. There is ample review material in this text and it is scattered throughout the book so that it may be of most help to students. The treatment of graphic representation is especially good and the various illustrative problems have been adequately presented. A wealth of problems is included and these have been carefully tested and arranged. The volume will undoubtedly become a popular text in our colleges and it should give very satisfactory service.—WILLIAM P. SEARS, Jr., New York University.

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